SONY.

EV-A50

Video Cassette Recorder

Operating Instructions

Before operating the unit, please read this manual thoroughly and retain it for future reference.

Video 8™

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

INFORMATION
This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

   Reorient the receiving antenna.
   Relocate the equipment with respect to the receiver
   Move the equipment away from the receiver
   Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:
"How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No.004-000-00345-4.

Caution
Television programs, films, video tapes and other materials may be copyrighted.
Unauthorized recording of such material may be contrary to the provisions of copyright laws.
Also, use of this recorder with cable television transmission may require authorization from the cable television transmitter and/or program owner.

For the customers in Canada
This apparatus complies with the Class B limits for radio noise emissions set out in Radio interference Regulations.

Owner's Record

The model number is located at the front and rear panel, and serial number is located on the top. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. EV-A50

Serial No. _____

Welcome!

Congratulations on your purchase of the Sony EV-A50 Video Cassette Recorder.
This Video cassette recorder is the result our commitment to bring Sony customers high quality and state-of-the-art technology.
Thank you for choosing Sony.

Table of Contents

Precautions

Safety

- Operate the unit only on 120 V AC, 60Hz.
- If anything falls into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- One blade of the plug is wider than the other for the purposes of safety and will fit into the power outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.
- Unplug the unit from the wall outlet if you do not intend to use it for an extended period of time. To disconnect the cord, pull it out by the plug itself, never by the cord.

Installation

- Allow adequate air circulation to prevent internal heat buildup.
- Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not install the unit near heat sources such as radiators or air ducts, or in a places subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Keep the unit and cassettes away from equipment with strong magnets, such as microwave ovens or large loudspeakers.
- Keep the unit away from a TV. Otherwise, it may cause interference with the TV.
- Do not place heavy objects on the unit.

Operation

- When the unit is not in use, turn the power off to conserve energy and to extend its life.
- Remove and store video cassettes after recording or playback.

Cleaning

- Clean the cabinet, panel and controls with a dry, soft cloth, or a soft cloth slightly moistened with a mild detergent solution
- Do not use any type of solvent, such as alcohol or benzine.

Recording and Playback

- This VCR uses 8mm video format cassettes.
- This VCR records in SP mode (approximately 1.43 cm/second) and LP mode (approximately 0.72 cm/second).
- This VCR can play back in SP mode and LP mode.
- This VCR can not record in the Hi8 video system nor does this VCR play back a tape recorded in the Hi8 video system on other VCRs.
- The PCM audio feature is not available on this VCR. Therefore, you can neither record in the digital multi system nor play back a tape recorded in the digital multi system on other VCRs.
- Audio dubbing cannot be performed on this VCR.

Features

Functions

- **Voice boost function**
When playing back a tape recorded with a camcorder, enhances a voice portion of the sound and reduces "unwanted" background noise like wind so that it's easier to listen to conversation.

- **Timer recording of six programs in a month**
Recording of up to six TV programs can be preset up to one month in advance.

On-screen display

- **Data screen**
Date, time, tape counter, tape recording speed and operation mode can be displayed on the TV screen.

- **TIMER SET/CHECK display**
Timer recording settings can be set and checked by referring to the TV screen.

- **SLEEP TIMER display**
The power off time can be set in the unit of 30 minutes (up to 5 hours).

- **ON SCREEN HELP messages**
The VCR gives a message on screen to warn that you have attempted an incorrect operation.

Editing

- **DUAL MODE SHUTTLE ring**
Allows quick access to the desired scene and playback in various speeds in forward and reverse direction.

- **Control L ⏻ (LANC) jack**
Allows connection with another video equipment such as a video camera recorder (camcorder), controlling tape transportation easily.
Furthermore, simultaneous control of both devices is enabled for bi-directional synchronized editing.

- **CONTROL S INPUT jack**
Allows remote control of this VCR by other Sony video equipment with a CONTROL S OUTPUT jack.

How to Use This Manual

This manual is divided into the following seven chapters: **Chapter 1** Introduction, **Chapter 2** Hookups and Getting Started, **Chapter 3** Preaparation, **Chapter 4** Basic Operations, **Chapter 5** Advanced Operations, **Chapter 6** Editing and **Chapter 7** Additional Information.
If you are already familiar with the basic operations, skip **Chapter 4** Basic Operations and see **Chapter 5** Advanced Operations.
If you have any problems with installing or operating the EV-A50, refer to the troubleshooting section first before calling your local Sony dealer.

When you are reading through the manual, remember:
- Buttons and switches on the VCR to be used in operating the VCR are shown in uppercase letters in the illustrations.
- Buttons and switches on the Remote Commander to be used for operating the VCR are outlined on the illustrations.

Unpacking

Unpack all the items and check to confirm that you have everything listed below.

- Remote Commander RMT-V119 (1)
- Size AA (R6) batteris (2)
- External antenna connector (1)
- 75-ohm coaxial cable with F-type connectors (1)
- AC power cord (1)

Hookups and Getting Started

Before you can use your VCR for the first time, you need to connect it to your TV and set it up to receive programs for viewing and recording. This section explains how to hook up, set up, and operate your VCR so that you can start enjoying it right away. There are, however, many types of TVs available and many different ways in which your TV can be hooked up. As a result, this manual describes several ways your VCR can be connected.

Use the following table to select the right hookup for your TV.

When	See
Your TV has audio/video (A/V) inputs	**Hookup 1** Audio/Video (A/V) Hookup (page 7)
Your TV doesn't have audio/video (A/V) inputs	**Hookup 2** Antenna Hookup (page 8)
You have cable, and record only unscrambled channels	**Hookup 3** Simple Cable Hookup (page 10)
You have cable, and record scrambled and unscrambled channels	**Hookup 4** Alternate Cable Hookup (page 12)
You have cable, and use A/B switch	**Hookup 5** Advanced Cable Hookup (page 14)

After you've completed the connections, follow the instructions for setup. (During setup, if you need more details of the procedures described, page numbers are provided where you can find complete, step-by-step instructions.)
After you've completed the setup, you're ready to use your VCR. Follow the instructions provided in "To watch TV," "To Watch the VCR," and "To Record a program using the timer," for your specific hookup. (Again, if you need step-by-step instructions, page numbers are provided where you can find these instructions.)

Before making the connections, check the following points:
- Turn off the power to the VCR and TV.
- Do not connect the AC power cord until all of the connections are completed.

To wall outlet
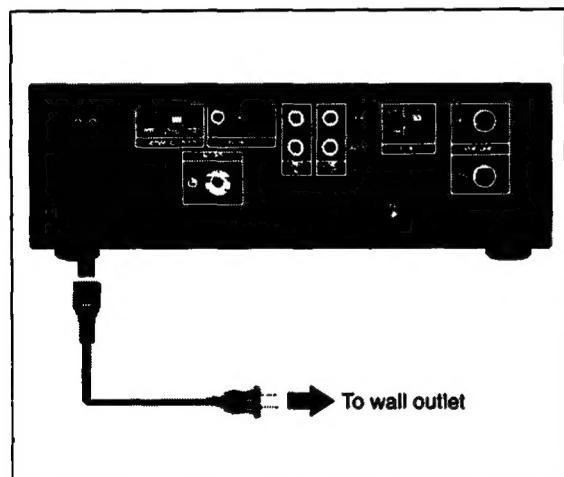
- Make connections firmly. Loose connections may cause picture distortion.
- If your TV doesn't match any of the examples provided, consult your nearest Sony dealer or qualified technician.

Caution
Connections between the VCR VHF/UHF OUT connector and the antenna terminals of a TV receiver should be made only as shown in the instructions. Failure to do so may result in operation that violates the regulations of the Federal Communications Commission regarding the use and operation of RF devices. Never connect the output of the recorder to an antenna or make simultaneous (parallel) antenna and recorder connections at the antenna terminals of your receiver.

NOTE TO CATV SYSTEM INSTALLER IN THE U.S.A.
This reminder is provided to call the cable TV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Caution
Do not place the VCR near a TV. The playback picture may become distorted.

X
NO!
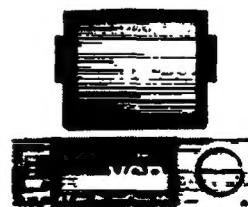
Hookup 1

Audio/Video (A/V) Hookup

If your TV has audio/video (A/V) input jacks, you will get a better picture and sound if you hook up your VCR using these connections. If your TV doesn't have A/V inputs, see the following pages for antenna or cable hookup.

If you only wish to play back movies, you're finished after you've made these connections. If you want to record programs off the air or off your cable TV system, please make the A/V hookup on this page first, then proceed to the following pages for antenna or cable hookup.

1A Use hook up 1A if your TV is a monaural type.

VCR

TV

LINE OUT
VIDEO/AUDIO

VIDEO IN
AUDIO IN

IN
VIDEO IN
AUDIO IN
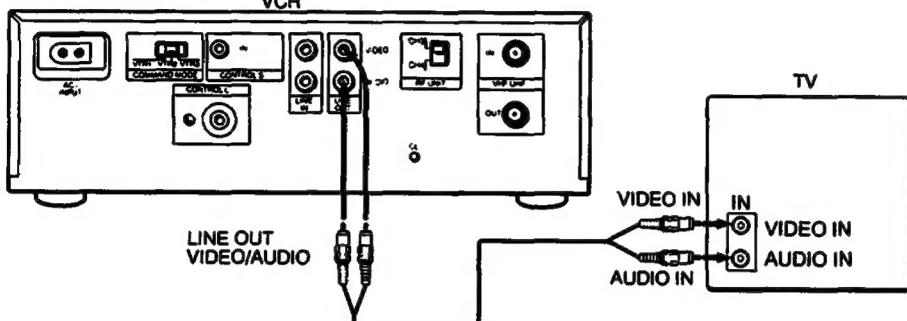
1B Use hook up 1B if your TV is a stereo type.

VCR

TV

LINE OUT
VIDEO/AUDIO

VIDEO IN

IN
VIDEO
LEFT
RIGHT
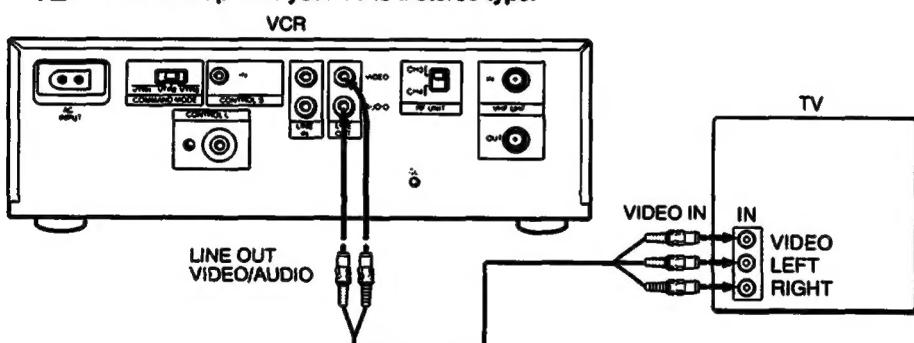
After you've hooked up your TV using the A/V connections, use the following procedure to set up and use the VCR with your TV.

A/V Setup and Operation
Set the AUTO ANT SEL setting to OFF.

Press MENU.	Select SET UP MENU.	Select AUTO ANT SEL.	Set to MAN.

Details are on page 22.

Hookup 2

Antenna Hookup

Make the following connections if you're using an antenna (not a cable TV). Check the type of antenna you are using and choose the appropriate connection.

2A If you are using VHF/UHF antenna (you get Ch 2-13 and Ch 14 or higher).
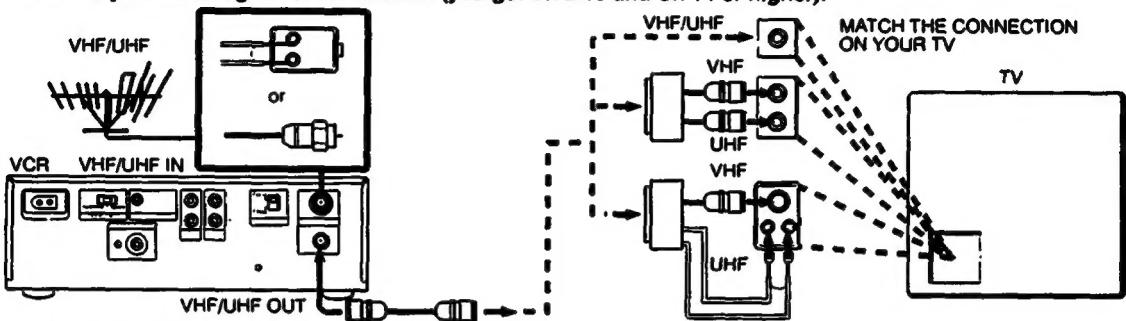
2B If you are using VHF only (you get Ch 2-13 only).
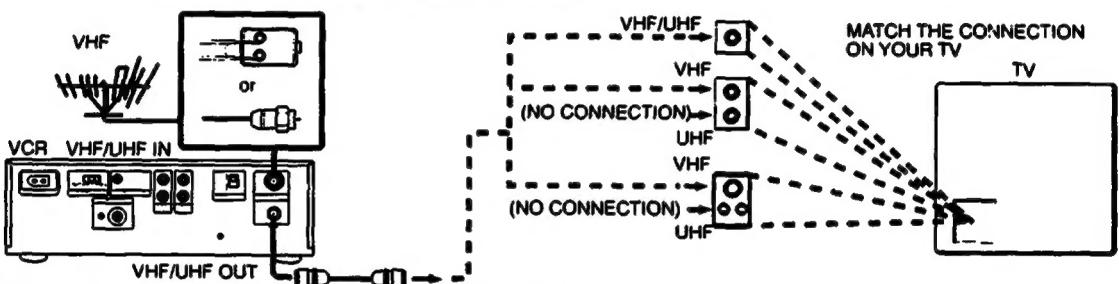
2C If you are using UHF only (you get Ch 14 or higher).
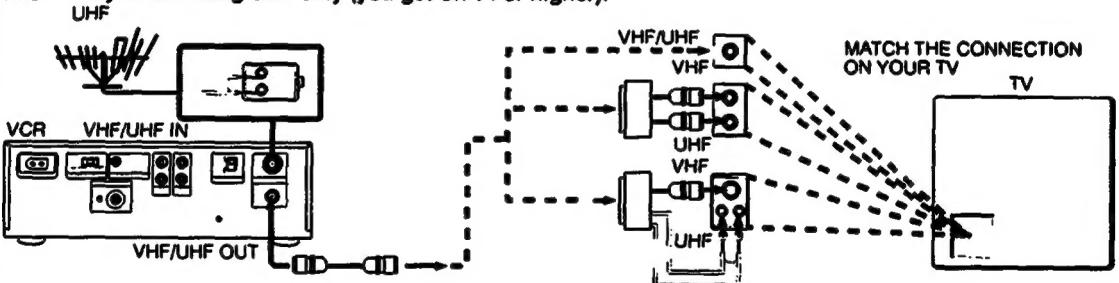
2D If you are using separate VHF and UHF antennas.
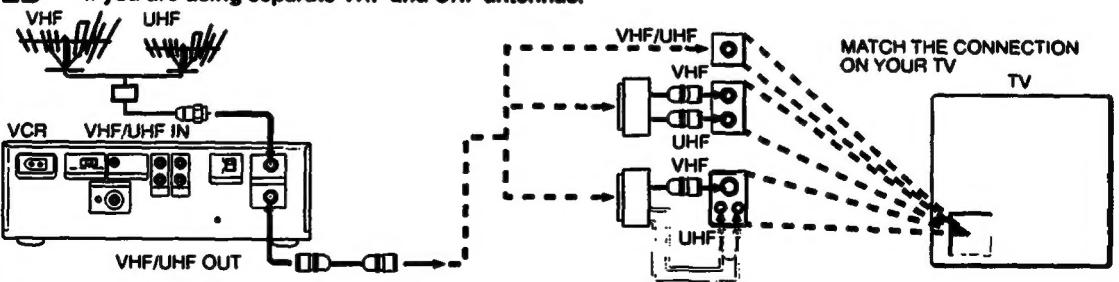
Details are on pages 58 and 59.

VCR Setup (Antenna)

1 Set the RF UNIT on the VCR's rear panel to CH3 or CH4.

If you made A/V connections, skip this adjustment.

CH3

CH4

Set to whichever channel is not used in your area.
If both are used, pick either channel.

Details are on page 57.

2 Set NORMAL/CATV to NORM.

Press MENU.

Select TUNER PRESET.
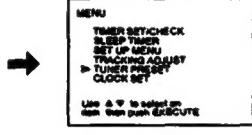
Set to NORM.
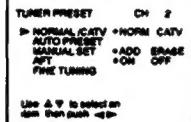
Details are on page 19.

3 Preprogram the channels into the VCR.

Press MENU.

Select TUNER PRESET.

Select AUTO PRESET, then press EXECUTE.

Details are on page 19.

Clock Setting

1 Press MENU.

2 Press ▲ or ▼ o move the cursor (▶) to CLOCK SET.

3 Press EXECUTE.

4 Press ▲ or ▼ to set the flashing position, press ◀ or ▶ to move the flashing position.

5 Press EXECUTE to start the clock.

Details are on page 18.

To Watch TV

1 Turn your VCR off, or press the VCR's TV/VTR button on the Remote Commander until the VTR indicator in the display window goes off.

2 Tune the TV normally.

To Watch the VCR

1 Tune the TV to Ch. 3 or 4, whichever you set on the back of the VCR. (If you made the A/V connections on page 7, set your TV to the A/V input instead.)

2 Insert a cassette and press ▶ PLAY.

3 If there's no picture on your TV, press the VCR's TV/VTR button until the VTR indicator appears in the VCR's display.

Details are on page 24.

To Record a Program Using the Timer

1 Insert a cassette.

2 Press MENU.

3 Select TIMER SET/CHECK.

4 Press EXECUTE.

5 Set DATE, ON time, OFF time , CHannel and tape recording speed.

6 Press EXECUTE and then TIMER REC (ON/OFF).

Details are on pages 28 and 29.

Hookup 3

Simple Cable Hookup

Recommended Use:
Since this is the simplest hookup, you should try this hookup first.
If you cannot record the channels you want, you'll need to following pages, or contact your cable company for assistance.

Background
This VCR can record virtually any unscrambled cable channel. Some cable systems "scramble" specific channels, usually premium or pay-per-view channels. You will not be able to record scrambled channels with this hookup.

WALL

VCR   VHF/UHF IN

VHF/UHF OUT

OR CONNECT DIRECTLY TO TV IF YOU DO NOT HAVE A CABLE BOX

VHF/UHF

VHF

UHF
(NO CONNECTION)

MATCH THE CONNECTION ON YOUR TV

TV

CABLE BOX

IN
OUT

VHF

UHF   (NO CONNECTION)

What you Can and Can't Do With This Hookup

What You Can Do
● Record any unscrambled channel directly, without using a cable box.

What You Can't Do
● Record scrambled channels that require a cable box.

VCR Setup (Simple Cable)

1 Set the RF UNIT on the VCR's rear panel to CH3 or CH4.
If you made A/V connections, skip this adjustment.

```
CH3
CH4
```

Set to whichever channel is not used in your area.
If both are used, pick either channel.

Details are on page 57.

2 Set NORMAL/CATV to CATV.

Press MENU.

```
MENU
▶ TIMER SET/CHECK
  SLEEP TIMER
  SET UP MENU
  TRACKING ADJUST
  TUNER PRESET
  CLOCK SET

Use ▲ ▼ to select an
item, then push EXECUTE
```

Select TUNER PRESET.

```
MENU
  TIMER SET/CHECK
  SLEEP TIMER
  SET UP MENU
  TRACKING ADJUST
▶ TUNER PRESET
  CLOCK SET

Use ▲ ▼ to select an
item, then push EXECUTE
```

Set to CATV.

```
TUNER PRESET      CH  1
▶ NORMAL/CATV    NORM/CATV
  AUTO PRESET
  MANUAL SET     ◦ADD  ERASE
  AFT            ◦ON   OFF
  FINE TUNING

Use ▲ ▼ to select an
item, then push ◀ ▶
```

Details are on page 19.

3 Preprogram the channels into the VCR.

Press MENU.

```
MENU
▶ TIMER SET/CHECK
  SLEEP TIMER
  SET UP MENU
  TRACKING ADJUST
  TUNER PRESET
  CLOCK SET

Use ▲ ▼ to select an
item, then push EXECUTE
```

Select TUNER PRESET.

```
TUNER PRESET      CH  1
  NORMAL/CATV    NORM/CATV
  AUTO PRESET
▶ MANUAL SET     ◦ADD  ERASE
  AFT            ◦ON   OFF
  FINE TUNING

Use ▲ ▼ to adjust
```

Select AUTO PRESET,
then press EXECUTE.

```
TUNER PRESET      CH  1
  NORMAL/CATV    NORM/CATV
▶ AUTO PRESET
  MANUAL SET     ◦ADD  ERASE
  AFT            ◦ON   OFF
  FINE TUNING

To start AUTO PRESET,
Push EXECUTE
```
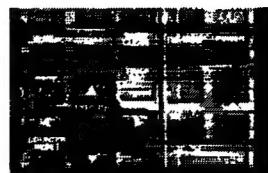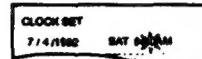
Details are on page 19.

Clock Setting

1 Press MENU.

2 Press ▲ or ▼ to move the cursor (▶) to CLOCK SET.

3 Press EXECUTE.

4 Press ▲ or ▼ to set the flashing position, press ◀ or ▶ to move the flashing position.

```
CLOCK SET
7/4/1992    SAT  9:30AM
```
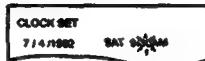
5 Press EXECUTE to start the clock.

Details are on page 18.

To Watch TV

1 Turn your VCR off, or press the VCR's TV/VTR button on the Remote Commander until the VTR indicator in the display window goes off.

2 Select the channel with our cable (if you have one), or directly tune with your TV (if you don't)

To Watch the VCR

1a If you didn't use the A/V input:
- Turn ON the cable box.
- Select ch 3 or 4 on the **cable box** (whichever you set on the back of the VCR).
- Select the output channel of the cable box (usually 2, 3 or 4) on your TV.

1b If you made the A/V connections on page 7:
Set your TV to the A/V input.

2 Insert a cassette and press ▶ PLAY.

Details are on pages 24.

To Record a Program Using the Timer

1 Insert a cassette.
2 Press MENU.
3 Select TIMER SET/CHECK.
4 Press EXECUTE.
5 Set DATE, ON time, OFFtime , CHannel and tape recording speed.
6 Press EXECUTE and then TIMER REC (ON/OFF).
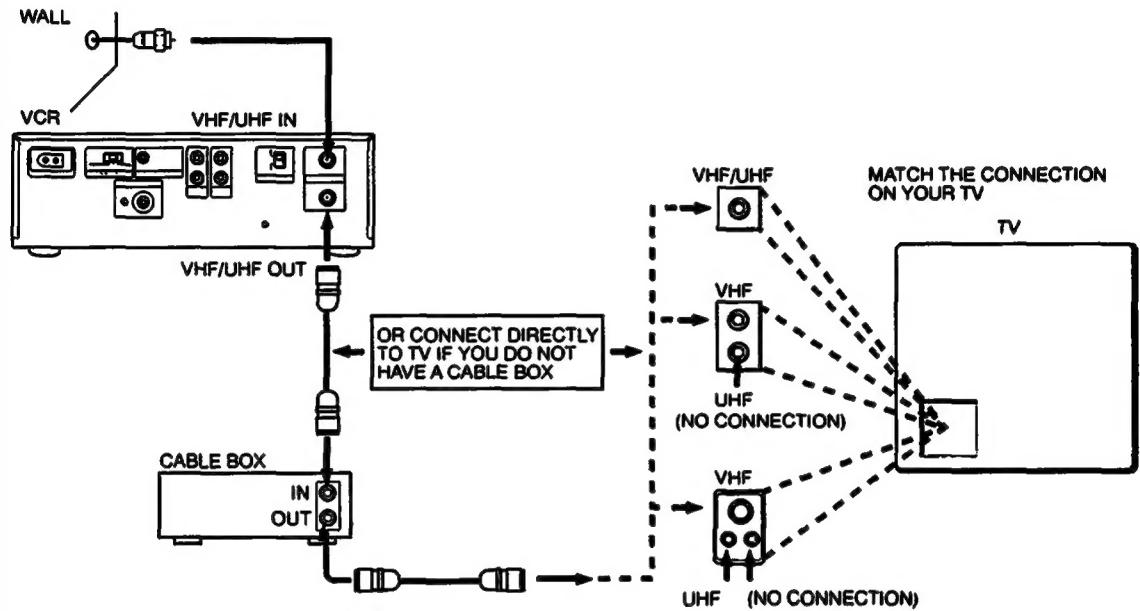
Details are on pages 28 and 29.

Hookup 4

Alternate Cable Hookup

Recommended Use:
This hookup will allow you to record either scrambled or unscrambled channels; however, you will have to set the channel on the cable box for each program you want to record. If your cable system scrambles all or most channels, you must use this hookup. If your cable system only scrambles a few channels, you may prefer **Hookup 3** or **5** (on pages 10 and 14, respectively). Please note that **Hookup 3** will not allow you to record scrambled channels.
Hookup 5 will allow you to record either scrambled or unscrambled channels, but will require that you purchase a few extra parts at your local electronics store.

Background
This VCR can record virtually any unscrambled cable channel. Some cable systems "scramble" specific channels, usually premium or pay-per-view channels. Although this hookup will also allow you to record these scrambled channels, you must use the cable box rather than the VCR to select channels.
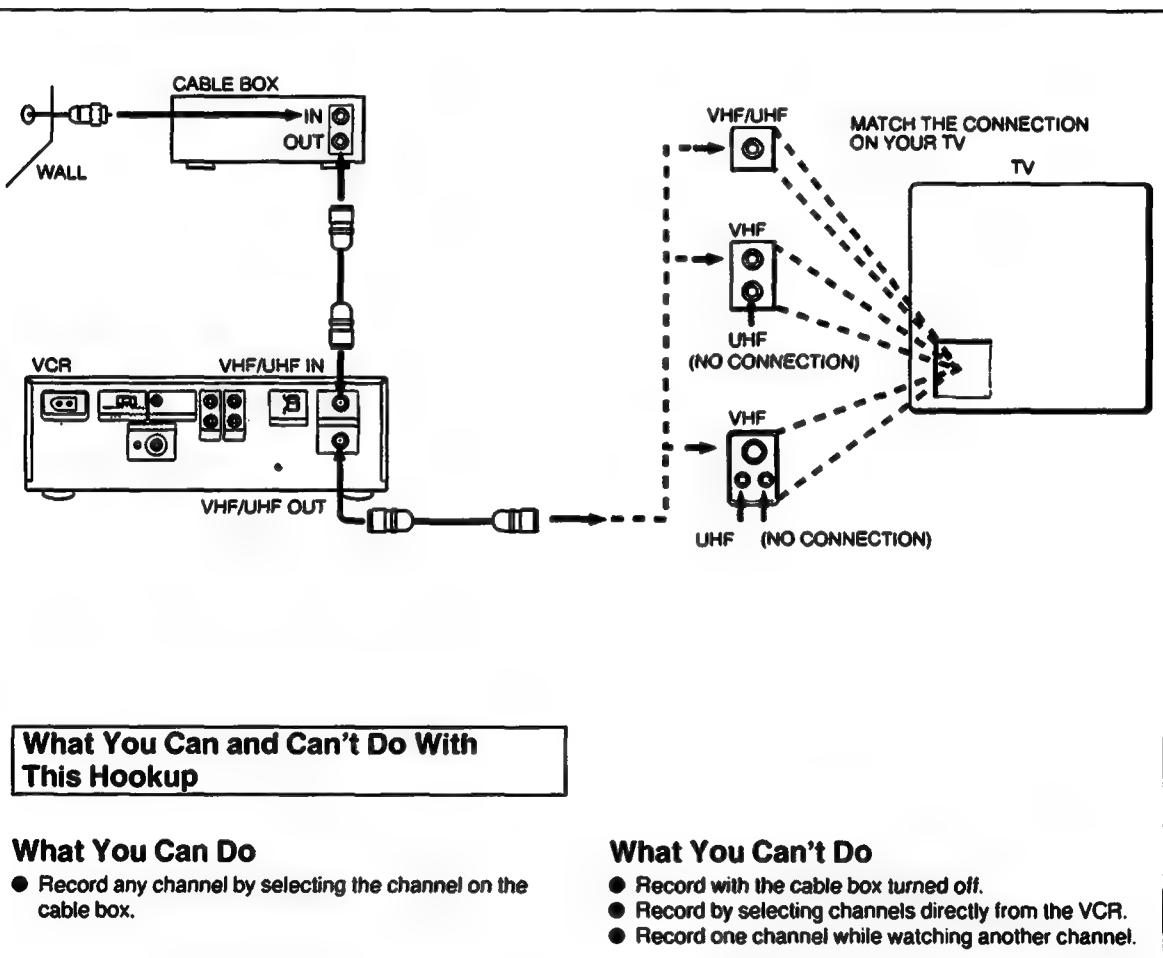
What You Can and Can't Do With This Hookup

What You Can Do
● Record any channel by selecting the channel on the cable box.

What You Can't Do
● Record with the cable box turned off.
● Record by selecting channels directly from the VCR.
● Record one channel while watching another channel.

VCR Setup (Alternate Cable)

1 Set the RF UNIT on the VCR's rear panel to CH3 or CH4.
If you made A/V connections, skip this adjustment.

CH3
CH4

Set to whichever channel is not used in your area.
If both are used, pick either channel.

Details are on page 57.

2 Set on your cable box.

3 Preprogram the channels into the VCR.

Press MENU.   Select TUNER PRESET.

MENU   MENU
▶ TIMER SET/CHECK   TIMER SET/CHECK
  SLEEP TIMER   SLEEP TIMER
  SET UP MENU   SET UP MENU
  TRACKING ADJUST   TRACKING ADJUST
  TUNER PRESET   ▶ TUNER PRESET
  CLOCK SET   CLOCK SET

Use ▲ ▼ to select an   Use ▲ ▼ to select an
item, then push EXECUTE   item, then push EXECUTE
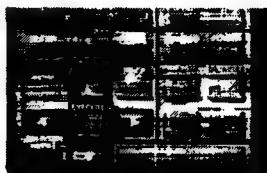
Select AUTO PRESET,
then press EXECUTE.

TUNER PRESET   CH   3
    NORMAL/CATV ▶NORM CATV
▶ AUTO PRESET
  MANUAL SET   ▶ADD ERASE
  AFT   ▶ON   OFF
  FINE TUNING

To start AUTO PRESET,
Push EXECUTE

Details are on page 19.

Clock Setting

1 Press MENU.

2 Press ▲ or ▼ to move the cursor (▶) to CLOCK SET.

3 Press EXECUTE.

4 Press ▲ or ▼ to set the flashing position, press ◀ or ▶ to move the flashing position.

CLOCK SET
7 / 4 /1992   SAT 9:00AM

5 Press EXECUTE to start the clock.

Details are on page 18.

To Watch TV

1 Turn your VCR off, or press the VCR's TV/VTR button on the Remote Commander until the VTR indicator in the display window goes off.

2 Switch on your cable box.

3 Tune the TV to the cable box output channel (usually 2, 3, or 4).

4 Select the channel that you want to watch with your cable box.

To Watch the VCR

1 Tune the TV to Ch3 or Ch4 (or to A/V input if you made A/V connections).

2 Insert a cassette and press ▶ PLAY.

Details are on page 24.

To Record a Program Using the Timer

1 Insert a cassette.

2 Switch on the cable box.

3 Select the channel you wish to record on the cable box.

4 Press MENU, and select TIMER SET/CHECK, and press EXECUTE.

5 Set DATE, ON time, OFF time, CHannel and tape recording speed.
The channel number must be the same as the cable box output channel.

6 Press EXECUTE and then TIMER REC (ON/OFF).

7 Leave the cable box ON.

Details are on pages 28 and 29.

Hookup 5

Advanced Cable Hookup

Recommended Use:
By using the A/B switch, this hookup allows you to record most channels directly from the VCR (position "A"). You only use position "B" and the cable box if you want to record a "scrambled" channel. This gives you the most convenient operation of the VCR.

Background
This VCR can record virtually any unscrambled cable channel. Some cable systems "scramble" specific channels, usually premium or pay-per-view channels. This hookup will allow you to record unscrambled channels by selecting "A" on the A/B switch, and tuning the channel directly on your VCR. To record "scrambled" channels, select "B" on the A/B switch, and select the channel using the cable box. If your cable system scrambles all or most channels, you must use the alternate cable hookup (Hookup 4) on page 12.

● Only one cable is supplied with your VCR.
Additional cables must be purchased separately.
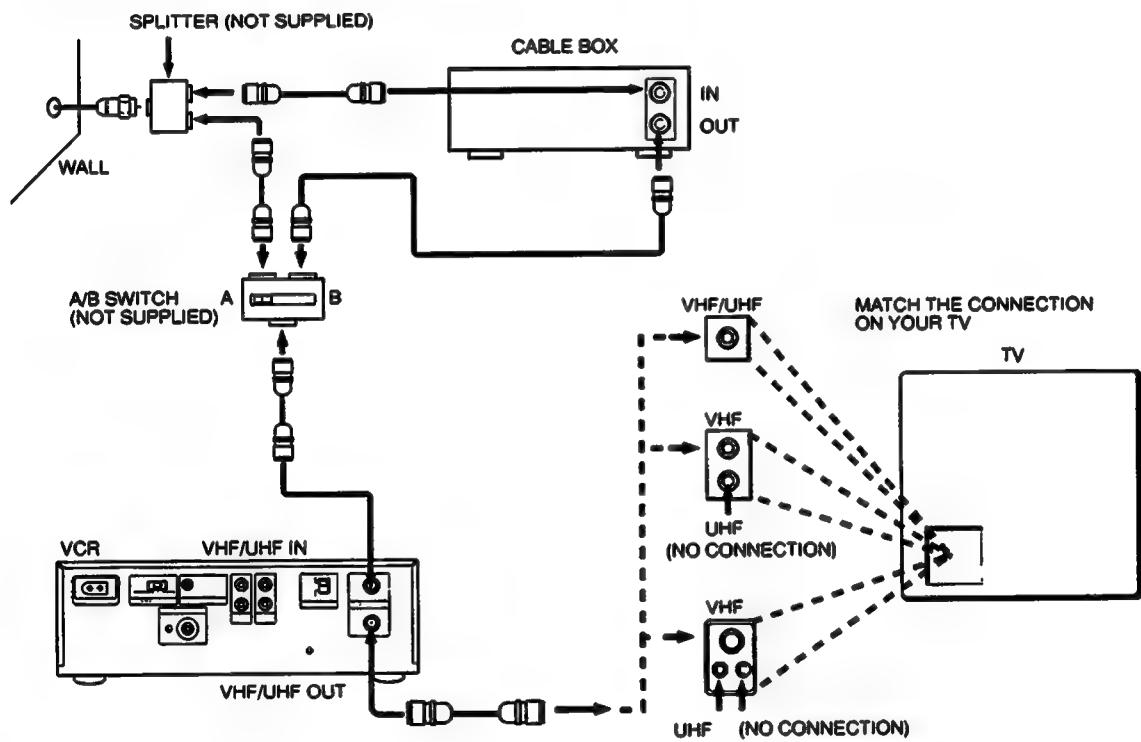
What You Can and Can't Do With This Hookup

What You Can Do
● Record unscrambled channels directly with the A/B switch in the 'A' position.
● Record scrambled channels through the cable box with the A/B switch in the 'B' position.

What You Can't Do
● Record scrambled channels directly without the cable box.
● Watch a different channel while you are recording a scrambled channel.
● Record scrambled channels through the cable box with the A/B switch in the "A" position.

VCR Setup (Advanced Cable)

1 Set the RF UNIT on the VCR's rear panel to CH3 or CH4.
If you made A/V connections, skip this adjustment.

CH3
CH4

Set to whichever channel is not used in your area.
If both are used, pick either channel.

Details are on page 57.

2 Set the A/B switch to "A".

3 Set NORMAL/CATV to CATV.

Press MENU.   Select TUNER PRESET.

Set to CATV.

Details are on page 19.

4 Preprogram the channels into the VCR.

Press MENU.   Select TUNER PRESET.

Select AUTO PRESET,
then press EXECUTE.

Details are on page 19.

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5 Add the cable box output channel (usually 2, 3, or 4).

Press MENU.   Select TUNER PRESET.

Select MANUAL SET.

Adjust the cable box output channel (usually 2, 3, or 4). For example, press 3 and ENTER, set to ADD, then press EXECUTE.

Details are on page 20.

– Clock Setting

1 Press MENU.
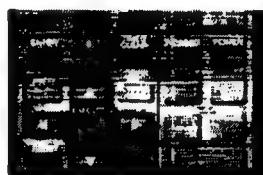
2 Press ▲ or ▼ to move the cursor (▶) to CLOCK SET.

3 Press EXECUTE.

4 Press ▲ or ▼ to set the flashing position, press ◄ or ▶ to move the flashing position.
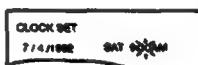
5 Press EXECUTE to start the clock.

Details are on page 18.

To Watch TV

1 Turn your VCR off, or press the VCR's TV/VTR button on the Remote Commander until the VTR indicator in the display window goes off.

2 Set the A/B switch to "B".

3 Switch on your cable box.

4 Tune the TV to the cable box output channel (usually 2, 3, or 4).

5 Select the channel you want to watch with your cable box.

6 After watching the TV, please remember to return the A/B switch and cable box channel to the correct positon.

To Watch the VCR

1 Tune the TV to Ch 3 or 4 (or to A/V input if you made A/V connections).

2 Insert a cassette and press ▶ PLAY.

Details are on page 24.

To Record a Program Using the Timer

● Unscrambled Channels

1 Insert a cassette.

2 Switch the A/B switch to "A".

3 Press MENU and select TIMER SET/CHECK.

4 Press EXECUTE.

5 Set DATE, ON time, OFF time, CHannel and tape recording speed.

6 Press EXECUTE and then press TIMER REC (ON/OFF).

7 Leave the A/B switch in "A".

● Scrambled Channels

1 Insert a blank cassette.

2 Switch the A/B switch to "B".

3 Switch on your cable box.

4 Select the channel you want to record on the cable box.

5 Press MENU and select TIMER SET/CHECK.

6 Press EXECUTE.

7 Set DATE, ON time, OFF time, CHannel and tape recording speed.
   The channel number must be the same as the cable box output channel.

8 Press EXECUTE and then TIMER REC (ON/OFF).

9 Leave the A/B swithc in "B".

Details are on pages 28 and 29.

Preparing the Remote Commander
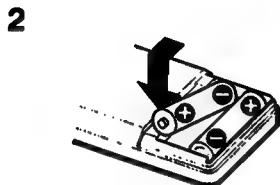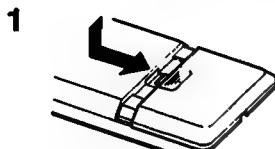
Inserting Batteries

1 Open the lid.

2 Insert two size AA (IEC designation R6) batteries with the polarity lined up correctly.

3 Close the lid.

Notes on the handling of batteries
- With normal use, the batteries should last for approximately six months.
- If you do not use the Remote Commander for an extended period of time, remove the batteries to avoid possible damage from battery leakage.
- Do not use a new battery together with an old one. Do not use different types of batteries.

Setting the Command Mode

You can select three different positions for the Command Mode setting.

1 Set the COMMAND MODE VTR 1/VTR 2/VTR 3 selector on the rear panel of the VCR to VTR 2.

2 Set the COMMAND MODE VTR1/VTR2/VTR3 selector on the Remote Commander to VTR2.

Controlling Other Sony Video Equipment

1 Set the Remote Commander COMMAND MODE VTR1/VTR2/VTR3 selector to a position other than the one you selected for this VCR.

2 Set the COMMAND MODE selector of any other video equipment to the same position you selected in step 1.

If other Sony video equipment does not have a COMMAND MODE selector, you can control such equipment using the following settings:

Infrared remote controlled Sony Betamax VCRs: VTR 1
(Some of them may not be controlled in this mode.)
Sony 8mm format VCRs: VTR 2
Sony VHS format VCRs: VTR 3
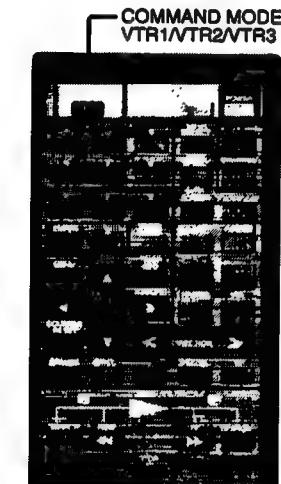
Setting the Time and Date

You can set the time and date between years 1992 and 2007 on the TV screen using the Remote Commander.
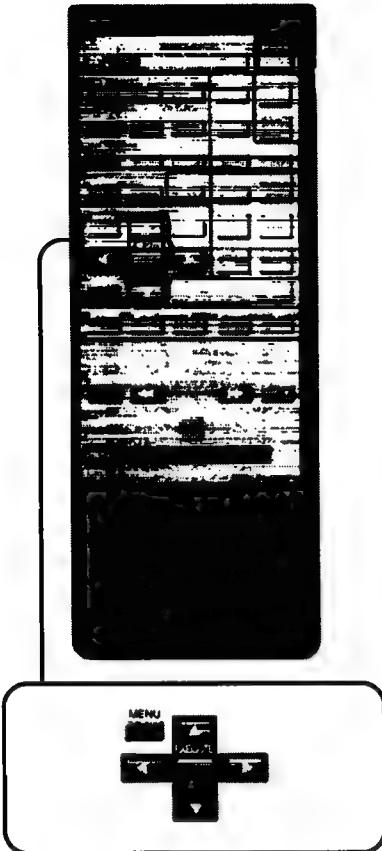
Before You Begin

* Use ▲ or ▼ to move the cursor (▶).
* Use ◀ or ▶ to select the items.
* The day of the week is automatically set after the date is set.
* To quit setting in the middle of the procedures, press MENU.

Example of Time and Date Setting

Example: To set to 9:30 am, July 4, 1992

1 Press MENU.
  The main MENU appears.

2 Press ▲ or ▼ to move the cursor (▶) to CLOCK SET.

3 Press EXECUTE.
  "1/1/1992 WED 12:00AM " is displayed.
  The leftmost 1, in the "month" position, flashes.

4 Press ▲ or ▼ until 7 appears in the month position.

5 Press ▶ to make the next number blink in the "day" position.

6 Press ▲ or ▼ until 4 appears in the day position.
  The day of the week is set automatically.

7 Press ▶ to make the year flash and press ▲ to change the year.

8 Press ▶ to make the time flash.

9 Press ▲ or ▼ until 9 AM appears.

10 Press ▶ to make the minute flash.

11 Press ▲ or ▼ until 30 appears in the minute position.

12 Press EXECUTE at the same time that you hear the time signal.
  Pressing EXECUTE will set the clock to 9:30 am 00 seconds.

If "–:––" lights up on the unit
If the power is interrupted for more than one hour, "–:––" lights up in the display when the power is restored. You will have to reset the date and clock again.

When the time and date clock is displayed
The clock keeps running as long as no changes are made. The seconds are not reset to 00 when you return to the original screen.

You cannot set the time and date during timer-activated recording, timer recording standby, quick – timer recording or sleep-timer.
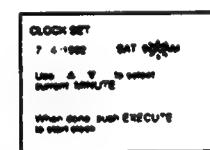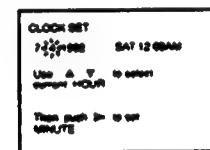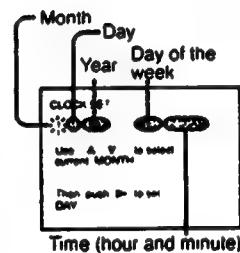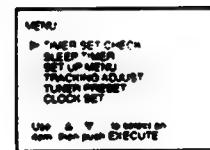
Presetting the Active Channels

This VCR can receive VHF channels 2 to 13, UHF channels 14 to 69 and CATV channels 1 to 125. These channels can be preset using the Remote Commander and the TUNER PRESET display. First, you should preset the active channels in your area using the automatic preset mode. Then, if there are any unwanted channels, disable them manually. If you have already decided which channels you wish to preset on the VCR, set them directly using the channel number buttons.

Before You Begin

Before presetting channels, check the following points:

- Turn on the VCR and the TV.
- If you have connected the TV and the VCR using the VHF/UHF OUT on the VCR only, make sure that the TV is set to the correct channel (3 or 4) for the VCR.
- Press TV/VTR to display the VTR indicator in the display window on the VCR.
- Press INPUT SELECT so that the TUNER indicator and the channel number appear in the display window on the VCR.
- Use ▲ and ▼ to move the cursor (▶).
- Use ◀ and ▶ to select the items.
- To quit setting in the middle of the procedures, press MENU.

Presetting All Receivable Channels Automatically

1 Press MENU.
The main MENU appears.

2 Press ▲ or ▼ to move the cursor (▶) to TUNER PRESET.

3 Press EXECUTE.
The TUNER PRESET menu is displayed.

4 Press ▲ or ▼ to move the cursor to NORMAL/CATV.

5 Press ◀ or ▶ to select NORM or CATV. NORM presets the VHF and UHF channels; CATV presets your cable TV channels. The lowest channel number 2 for NORM, and 1 for CATV, will appear on the screen.

6 Press ▲ or ▼ to move the cursor to AUTO PRESET.

7 Press EXECUTE.
Receivable channels preset in numerical sequence. When no more channels can be found, the presetting stops and the picture of the lowest numbered channel is displayed on the TV screen.
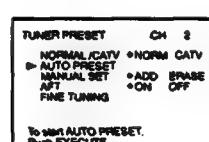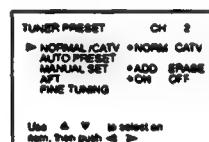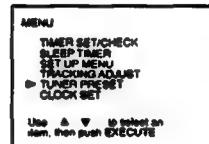
Presetting Desired Channels or Disabling Unwanted Channels

After automatic presetting is completed, you can disable and/or add channels.

1 Follow steps 1 through 3 in "Presetting All Receivable Channels Automatically" on page 19.

2 Press CHANNEL + / −, or press channel number buttons (0 through 9) and ENTER to select the channel.
Once a channel was erased, it is skipped with CHANNEL + / −. So, if you want to select the number that was erased, use channel number buttons (0 through 9) and ENTER to select the channel.

3 Press ▲ or ▼ to move the cursor to MANUAL SET.

4 To disable channels, press ◄ or ► to select ERASE.
To add channels, press ◄ or ► to select ADD.

5 Press EXECUTE.
When you press CHANNEL + / −, the disabled channels are removed and the added channels are displayed.

Fine-Tuning

Normally, the Auto Fine Tuning (AFT) setting on the TUNER PRESET menu is set to ON, and the AFT function fine-tunes the picture. If the picture of a channel is not acceptable, fine-tune it manually.

1 Follow steps 1 through 3 in "Presetting All Receivable Channels Automatically" on page 19.

2 Press ▲ or ▼ to move the cursor to FINE TUNING.
The fine tuning indicator is displayed.

3 Press ◄ or ► to get a clearer picture.
The AFT ON/OFF automatically switches to OFF.

4 If you cannot get a better picture, press ▲ to move the cursor to AFT and select ON. Then, press EXECUTE.
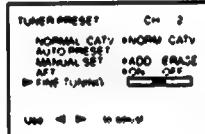
The FINE TUNING indicator

The FINE TUNING indicator shows the operable fine-tuning range and stops at the optimal point of reception. When the VCR's tuner is receiving an optimal broadcast signal, the indicator stops at the center position or one space right or left of the center position.
However, even when a broadcast is received in an optimal condition, the indicator may not be at the position described.

Cable TV Channel Assignment

Cable TV systems use letters or numerals to designate the channels. To tune-in a CATV channel, refer to the chart below which shows the CATV channel, numbers on this VCR and the corresponding CATV channel. Note that the channel number assignment shown in the chart may not correspond to the channel number used by your local cable company. Check with your local cable TV company for more information on the available channels.

Number on this VCR	1	2	...	13	14	15	16	17	18
Corresponding CATV channel	A-8	2	...	13	A	B	C	D	E

19	20	21	22	23	24	25	26	27	28	29	30	31
F	G	H	I	J	K	L	M	N	O	P	Q	R

32	33	34	35	36	37	...	94	95	96	97	98	99
S	T	U	V	W	W+1	...	W+58	A-5	A-4	A-3	A-2	A-1

100	...	125
W+59	...	W+84

The VCR is designed to correspond to the standard cable system. However, cable TV services may vary from area to area. Your local cable TV company may adopt either the HRC*1 or IRC*2 cable system. Even in these cases, this VCR can receive either of these cable systems in the best condition.

*1 HRC (Harmonic Related Carriers)

All channels except for 5 and 6 are 1250 KHz lower than the standard cable system. Channels 5 and 6 are 750 KHz higher than the standard cable system.

*2 IRC (Incremental Related Carriers)

All channels except for 5 and 6 are the same as the standard cable system. Channels 5 and 6 are 2000 KHz higher than the standard cable system.

FINE TUNING indicator for receiving HRC or IRC cable systems

Even when the signals are received in optimal condition, the FINE TUNING indicator will not stay at the center position for channels higher or lower than the standard cable system due to the difference in the frequency.

Note

Pay cable TV systems use scrambled or encoded signals and require special converters (decoders) in addition to the normal cable connection.

Using the SET UP MENU

Before using the VCR, set options in the SET UP MENU display to your preferred position.
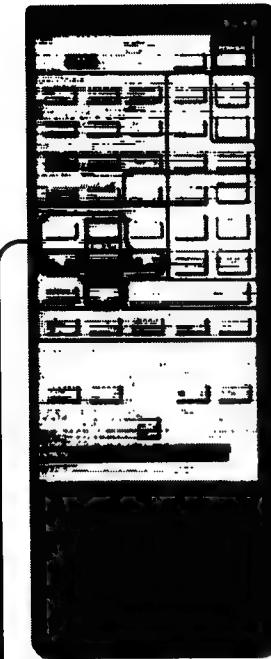
Before You Begin

- Use ▲ and ▼ to move the cursor (▶).
- Use ◀ and ▶ to select the items.
- To quit setting in the middle of the procedures, press MENU.

1 Press MENU.
The main MENU appears.

2 Press ▲ or ▼ to move the cursor (▶) to SET UP MENU.

3 Press EXECUTE.
The SET UP MENU appears.

4 Press ▲ or ▼ to move the cursor (▶) to the menu choice you want (see "Menu Choices" below).
Next, press ◀ or ▶ to move the dot (•) to select your desired mode setting.

5 Press EXECUTE to return to the original screen.
The settings are stored unless the power plug is disconnected.
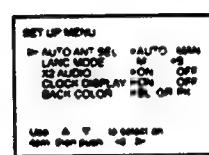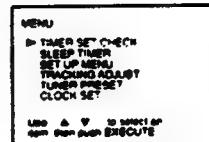
Menu Choices

AUTO ANT SEL (Automatic Antenna Selector)
- If your TV is connected only to VHF/UHF OUT on the VCR, set to AUTO.

  When playing back a cassette, the picture is automatically displayed on the screen simply by selecting the channel for the VCR on the TV. To watch TV programs selected on the TV, press TV/VTR to turn off the VTR indicator in the display window.

- If your TV is connected to both VHF/UHF OUT and LINE OUT on the VCR, set to MAN.

  When playing back a cassette, select the input for the VCR on the TV.
  To watch the TV programs selected on the TV, select the tuner input.

LANC MODE
- If you control another VCR with the SYNCHRO EDIT button, set to M.
- Set to S in a case except above-mentioned. (For details, see page 49.)

x 2 AUDIO
- If you want to listen to the sound during double-speed playback, select ON.
- If you do not want to listen to the sound during double-speed playback, select OFF.

CLOCK DISPLAY
To erase the current time and date from the on-screen display, set to OFF.

BACK COLOR
You can select the background color from the three choices, BL (blue), GR (green) or PK (pink).

Playback

EJECT

Caution

Be careful not to allow children to stick their fingers into the cassette loading slot. This may cause injury to the fingers.

This section shows you how to play back a video cassette.

Inserting a Video Cassette

1 Insert a video cassette.

2 Gently press the center of the front side of the cassette until the mechanism draws it into the compartment.
When the cassette has been inserted, the cassette indicator ⌈oo⌉ lights in the display window and the VCR turns on automatically.

Ejecting the Cassette

Press ▲ EJECT on the VCR. You can eject the cassette when the power is off.
When you press ▲ EJECT, the power is turned on. After ejecting the cassette, the power automatically shuts off.

Note
You cannot eject a cassette during recording, recording pause mode or timer standby.

Cassette Care

Notes
- Always insert the cassette in the correct position.
- Never insert anything in the small holes on the rear of the cassette.
- Store cassettes in their cases and keep them in an upright position to prevent intrusion of dust and uneven winding.
- To record from the beginning of the tape, run the VCR for about 15 seconds at the beginning of a cassette before recording.
- When the VCR is not in use, remove the cassette.
- Stick the cassette label in the designated area.
- Securely stick the label not to let it peel off.

Maximum recording time of a cassette

Cassette used	Recording/Playback Time	
	SP mode	LP mode
P6-15	15min	30min
P6-20	20min	40min
P6-30	30min	1h
P6-60	1h	2h
P6-90	1h 30min	3h
P6-120	2h	4h
P6-135	2h 15min	4h 30min
P6-150	2h 30min	5h

Rear side of a cassette
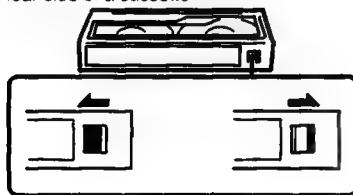
Protecting your cassette against accidental erasure
To prevent accidental erasure, slide out the tab on the cassette so that the red color is visible.

To re-record on the cassette, slide the tab back.

Playing Back a Cassette

You can control playback with the identically marked buttons on both the VCR and the Remote Commander.

1 Insert a cassette.
The VCR turns on automatically.

2 Turn on the TV.
If your TV is connected to both the VHF/UHF OUT and LINE OUT on the VCR, select the input for the VCR.
If your TV is connected only to the VHF/UHF OUT on the VCR, select the channel for the VCR (Ch 3 or Ch 4).

3 Press ▶ PLAY.

To stop playback
Press ■ STOP.

To stop playback for a moment
Press II PAUSE.
Press II PAUSE again or press ▶ PLAY to resume playback.

To advance the tape rapidly
VCR: Press ■ STOP, then turn the DUAL MODE SHUTTLE ring clockwise.
Remote Commander: Press ■ STOP, then ▶▶ FF.

To rewind the tape
VCR: Press ■ STOP, then turn the DUAL MODE SHUTTLE ring counterclockwise
Remote Commander: Press ■ STOP, then ◀◀ REW.

To view the picture during fast forward mode or rewind mode
You can view the picture momentarily while the VCR is in fast forward or rewind mode.

VCR: Turn the DUAL MODE SHUTTLE ring clockwise during fast-forward, and counterclockwise during rewind.
Remote Commander: Keep pressing ▶▶ during fast-forward, and keep pressing ◀◀ during rewind.
Release the button to return to fast forward or rewind.

To eject the cassette
Press ▲ EJECT on the VCR.

Pressing ▲ EJECT when the VCR is turned off will turn the VCR on, eject the cassette and then turn it off again.

When the tape reaches the end during playback
The VCR automatically rewinds the tape to the beginning and the power remains on.

To turn the VCR on or off
Press POWER.

Never unplug the power cord while a tape is moving
This may cause the tape to be jammed in the VCR. When you need to unplug the power cord, be sure to remove the cassette or turn off the power of the VCR.

Playing Back a Cassette
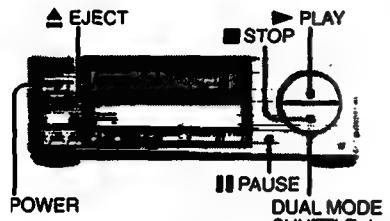
You can control playback with the identically marked buttons on both the VCR and the Remote Commander.

1 Insert a cassette.
The VCR turns on automatically.

2 Turn on the TV.
If your TV is connected to both the VHF/UHF OUT and LINE OUT on the VCR, select the input for the VCR.
If your TV is connected only to the VHF/UHF OUT on the VCR, select the channel for the VCR (Ch 3 or Ch 4).

3 Press ▶ PLAY.

To stop playback
Press ■ STOP.

To stop playback for a moment
Press ‖ PAUSE.
Press ‖ PAUSE again or press ▶ PLAY to resume playback.

To advance the tape rapidly
VCR: Press ■ STOP, then turn the DUAL MODE SHUTTLE ring clockwise.
Remote Commander: Press ■ STOP, then ▶▶ FF.

To rewind the tape
VCR: Press ■ STOP, then turn the DUAL MODE SHUTTLE ring counterclockwise
Remote Commander: Press ■ STOP, then ◀◀ REW.

To view the picture during fast forward mode or rewind mode
You can view the picture momentarily while the VCR is in fast forward or rewind mode.

VCR: Turn the DUAL MODE SHUTTLE ring clockwise during fast-forward, and counterclockwise during rewind.
Remote Commander: Keep pressing ▶▶ during fast-forward, and keep pressing ◀◀ during rewind.
Release the button to return to fast forward or rewind.

To eject the cassette
Press ▲ EJECT on the VCR.

Pressing ▲ EJECT when the VCR is turned off will turn the VCR on, eject the cassette and then turn it off again.

When the tape reaches the end during playback
The VCR automatically rewinds the tape to the beginning and the power remains on.

To turn the VCR on or off
Press POWER.

Never unplug the power cord while a tape is moving
This may cause the tape to be jammed in the VCR. When you need to unplug the power cord, be sure to remove the cassette or turn off the power of the VCR.

The Data Screen

To turn off or display the data screen on the TV screen, press DATA SCREEN on the Remote Commander.

Date (Month, day, day of the week)
and time (hour and minute)

Tape speed
Linear time counter*
Tape operation mode
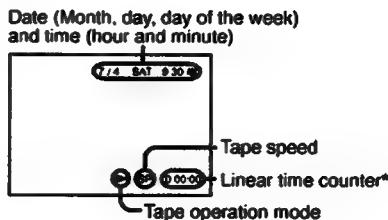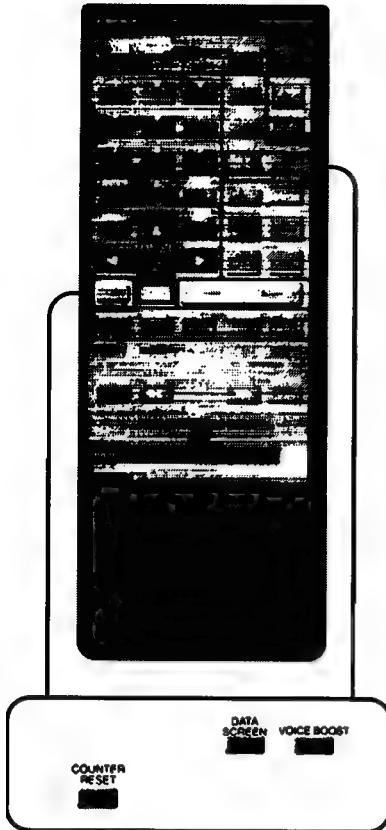
*Linear time counter
Before recording or playback, press COUNTER RESET to reset the counter to zero. This counter is a "linear time counter," which tells you how much the tape has run in terms of time. By noting the setting, you can find that point later by referring to the counter. Use the label on a cassette to list the programs and their counter readings. Since the counter is not so accurate, use it only for reference.

Listening More Easily to Conversation Recorded with a Camcorder

When you press VOICE BOOST while playing back a tape recorded with a camcorder, human voice portion of the sound will be enhanced so that it is easier to listen to conversation. This reduces the sound of wind and other "unwanted" background noise.

Notes on counter reading
- The counter does not work on the portions on which no recording has been made.

- After a cassette is ejected, the counter reading is retained. When a cassette is inserted in the VCR, the counter reading automatically returns to "0H00M00S".

- The linear time counter installed in this VCR is not a clock. There is a difference between the actual recording and playback time, and the counter display. This difference may increase when switching the tape speed from SP to LP and vice-versa, or depending on the position of the transported tape.

Recording

II PAUSE   ■ STOP

● REC
CHANNEL +/-
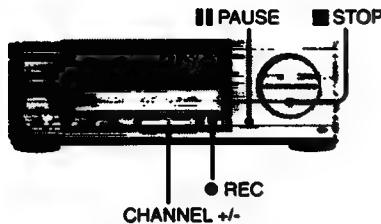
This section shows you how to record. Recording can be done several ways:
- As you are watching it (See page 26)
- As you are watching another channel (See page 27)
- While the TV is off (See page 27)

Before You Begin

Before you begin, check the following points:

- Make sure that the connections have been made correctly (See page 7 to 14.)
- Check the input mode indicator in the display window of the VCR.
- Press INPUT SELECT to light the channel number indicator in the display window of the VCR.

Recording TV Programs while You're Watching it

1 Insert a cassette.
The VCR turns on automatically.

2 If your TV is connected to both VHF/UHF OUT and LINE OUT on the VCR, select the input for the VCR.
If your TV is connected only to VHF/UHF OUT on the VCR, select the channel for the VCR (Ch 3 or Ch 4).

3 If your TV is connected only to VHF/UHF OUT, then press TV/VTR so that the VTR indicator lights up. Skip this step if your VCR is connected to both the VHF/UHF and LINE OUT.

4 Press INPUT SELECT to light the channel number in the display window of the VCR. Select the channel to be recorded with CHANNEL + / − or channel number buttons.

5 Select SP or LP with TAPE SPEED (SP/LP).
To select the best recording tape speed, see "Maximum recording time of a cassette" on page 23.

6 Press the two ● REC buttons on the Remote Commander at the same time, or the REC button on the VCR.
The REC recording indicator lights up in the display window of the VCR.

To stop recording
Press ■ STOP.

To pause recording
Press II PAUSE. To resume recording, press II PAUSE. If the recording pause exceeds 7 minutes, the VCR stops.

DUAL MODE SHUTTLE ring

II PAUSE

PAUSE

Pausing

Technique 1
You can stop recording an unwanted scene and resume recording smoothly.

1 Press II PAUSE when an unwanted scene appears.
Recording will stop and the VCR enters recording pause mode.

2 Press II PAUSE at the desired point to release pause mode.
Recording resumes from the point set in step 1.

Technique 2
When an unwanted scene has already started recording, you can rewind the cassette to the desired point, have the VCR standby in recording pause mode, and resume recording when the unwanted scene is over.

1 Press II PAUSE to set the VCR to recording pause mode.

2 Turn the DUAL MODE SHUTTLE ring on the VCR counterclockwise to search for the point from which you wish to continue recording.

3 Release the DUAL MODE SHUTTLE ring on the VCR at the desired point.
After an instant in still mode, the VCR automatically enters recording pause mode.

4 Press II PAUSE.
Recording resumes.
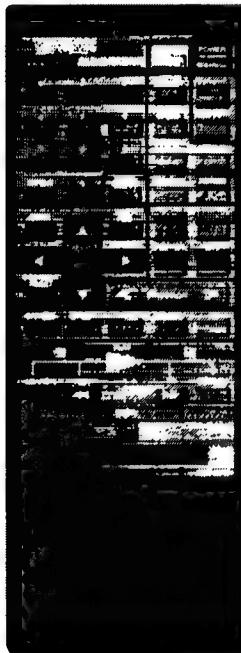
Recording with the TV Off

Turn off the power of the TV or monitor.
There will be no interference with the recording.

Watching One TV Program While Recording Another

If your TV is connected only to VHF/UHF OUT on the VCR

1 Press TV/VTR so that the VTR indicator goes off.

2 Select the channel you want to watch on the TV.

VTR Indicator	Picture on the TV screen
Lit	Channel selected by the VCR or the playback picture of the VCR
Unlit	Channel selected by the TV

If your TV is connected to both VHF/UHF OUT and LINE OUT on the VCR

1 Set the input select mode to TV on the TV.

2 Select the channel you want to watch on the TV.

TV/VTR

Timer-Activated Recording

The timer recording function lets you preset your VCR to record up to six programs within a one-month period. Perform this procedure using the Remote Commander and set each item on the TIMER/SET CHECK.
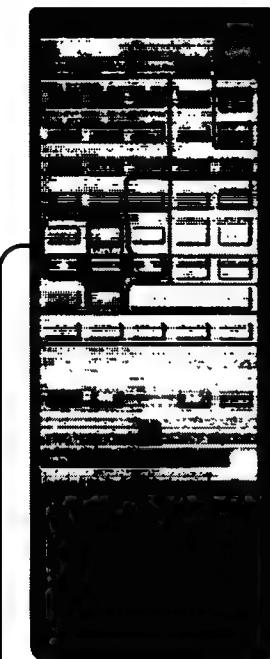
Before You Begin

- Make sure the time and date clock is set correctly (see "Setting the Time and Date" on page 18).
- Make sure the cassette is long enough to record all the programs.
- Make sure the safety tab of the cassette has not been slid out. If you insert a cassette with the safety tab visible in red (closed) and press TIMER REC (ON/OFF), the cassette automatically ejects from the VCR.
- Use ▲ and ▼ to move the cursor (▶).
- Use ◄ and ▶ to select items.
- To quit setting in the middle of the procedures, press MENU.

Setting the Timer

Example:

Record a program broadcast on channel 26 from 9:00 pm to 10:55 pm on Friday, July 10 in LP mode.

1 Press MENU.
The main MENU appears.

2 Press ▲ or ▼ to move the cursor (▶) to TIMER SET/CHECK.

3 Press EXECUTE.
The TIMER SET/CHECK display appears on the screen. If the clock is not set properly, reset the clock, referring to "Setting the Time and Date" on page 18.
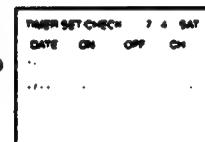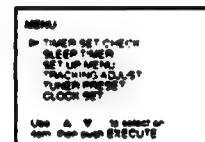
4 Press ▶.
The current date appears blinking under "DATE".
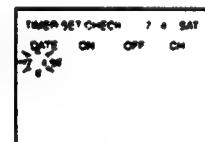
5 Press ▲ to set the month and date to 7/10/FRI.
The day of the week is automatically set.
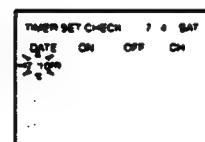
6 Press ▶ to blink the hours section under "ON" then ▲ or ▼ until 9PM appears.

TIMER SET/CHECK	7 / 4	SAT	
DATE	ON	OFF	CH
7/10PR	✳✳	...	...
./..	...	..	...
./..	...	..	...
./..	...	...	...
./..	..	...	...

7 Press ▶ to blink the minutes section under "ON", then ▲ or ▼ until 00 appears.

TIMER SET/CHECK	7 / 4	SAT	
DATE	ON	OFF	CH
7/10PR	✳✳	...	...
./..	...	..	...
./..	...	..	...
./..	...	..	...
./..	...	...	...

8 Press ▶ .
The cursor blinks in the time field under the "OFF" column.
Set the time to finish recording, referring to steps 6 and 7.

TIMER SET/CHECK	7 / 4	SAT	
DATE	ON	OFF	CH
7/10PR	9:00PN	✳✳	...
./..	...	...	...
./..	...	...	...
./..	...	...	...
./..	...	...	...

9 Press ▶ to blink the "CH" field , then press ▲ or ▼ until 26 appears.
Only the channels you have preset in the VCR will appear. You can also use the CHANNEL + / − or channel numbers buttons.

TIMER SET/CHECK	7 / 4	SAT	
DATE	ON	OFF	CH
7/10PR	9:00PN	11:00PN	✳
./..	...	...	...
./..	...	...	...
./..	...	...	...
./..	...	...	...

10 Press ▶ or TAPE SPEED on the Remote Commander to make the recording position blink, then ▲ or ▼ until LP appears.
To change or correct a setting before entering it, press ◀ to return to the item you want to change.

TIMER SET/CHECK	7 / 4	SAT	
DATE	ON	OFF	CH
7/10PR	9:00PN	11:00PN	26✳
./..	...	...	...
./..	...	...	...
./..	...	...	...
./..	...	...	...

11 Press ▶ to store the setting.
When all of the settings stop blinking and display a ▶ in the leftmost column, you've completed the setting.
To preset another program, move the cursor to the next line and repeat steps 4 to 11.

TIMER SET/CHECK	7 / 4	SAT	
DATE	ON	OFF	CH
▶7/10PR	9:00PN	11:00PN	26 LP
./..	...	...	...
./..	...	...	...
./..	...	...	...
./..	...	...	...

12 Press EXECUTE.
The message "Please push TIMER REC to set timer" appears on the TV screen.

13 Press TIMER REC (ON/OFF).
The VCR enters timer recording standby mode and the TIMER REC indicator in the display window of the VCR lights up.

To record video sources from LINE IN jacks
Press INPUT SELECT in step 9 to move the cursor to LINE in the "CH" field. This cursor returns to the channel number on the second press.

Daily/Weekly Recording

You can preset your VCR for daily or weekly recording.

Daily recording records the same program every day of the week. Weekly recording records the same program on the same day, every week.

Each time you press ▼, the indicator under the "DATE" column changes to one of the following choices:

SUN-SAT (Every day of the week)
↓
MON-SAT (Every day except Sunday)
↓
MON-FRI (Every day except Saturday and Sunday)
↓
EVERY SAT
↓
EVERY TUE
↓
EVERY MON
↓
EVERY SUN

Timer Recording Standby Mode

When you return the VCR to timer recording standby mode, you can record any previously preset programs. The VCR turns on automatically to record the first preset program. When it finishes recording, the power automatically shuts off.
To stop recording while a program is being recorded, press TIMER REC (ON/OFF).

Buttons Operable During Timer Recording

TIMER REC (ON/OFF)		To stop recording.
COUNTER RESET		(See "Linear time counter" on page 25.)
TV/VTR		(See "Watching One TV Program while Recording Another" on page 27.)
DATA SCREEN		(See "The Data screen" on page 25.)
MENU	TIMER SET CHECK	(See "Changing or Cancelling the Timer Settings" on page 33.)

If power interruption occurs during timer recording, recording will stop and your VCR will turn off. If power is restored within one hour, and it's before the recording end time, recording will start again from that point. If the interruption lasts for more than one hour, any presettings will be erased and you'll need to reset the time and date for your programs. Note that the tape counter will return to "0H00M00S."

When the Tape reaches the end during timer recording
The tape is not rewound automatically. If the tape runs out before the recording is completed, recording stops and the power is turned off.

When the recording of the preset program has finished
The program contents of the timer recording will be erased except for daily and weekly recording, and the program orders in the TIMER SET/CHECK list display will be moved up.

Overlapping Timer Recordings

In cases in which you have made a "mistake" when presetting multiple programs, the VCR will interpret your settings as described in the following cases.

Case 1
If you preset two programs to begin recording at the same time.

Program 1
(listed first in the list)
10:00 pm   10:50 pm

Program 2
(listed next in the list)
will be cleared   11:30 pm

The program listed first on the TIMER SET/CHECK list display has priority over the other programs. The timer settings for lower priority programs will be deleted from the PROGRAM LIST display when recording begins for the first program.

Case 2
If you set program 2 to begin recording at the exact time you set program 1 to finish recording.

10 seconds will not be recorded

Program 1
10:00 pm   10:50 pm
Program 2
11:40 pm
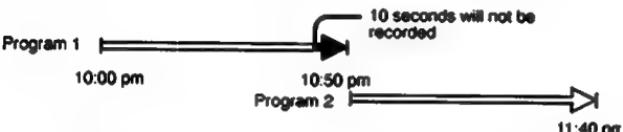
The last 10 seconds of program 1 will not be recorded.

Case 3
If you set program 2 to begin recording before program 1 has finished recording.

Will be cut off

Program 1
11:30 pm
10:00 pm
Program 2
10:45 pm   12.15 pm
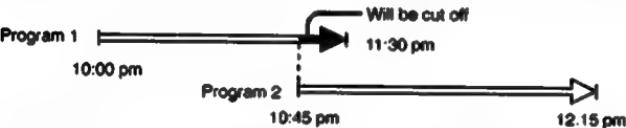
Program 2 will begin recording before program 1 has finished.

Checking the Timer Settings

Before You Begin

- Use ▲ and ▼ to move the cursor (▶).
- Use ◄ and ▶ to select items.

Here's how to display your timer settings to confirm the programs you wish to record.

1 Press TIMER REC (ON/OFF) to release timer recording standby mode.
The TIMER REC (recording) indicator turns off in the display window of the VCR.

2 Turn on the TV.

3 Press POWER to turn on the VCR.

4 Press MENU.
The main MENU appears.
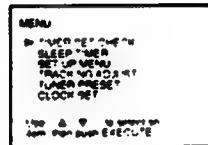
5 Press ▲ or ▼ to move the cursor (▶) to TIMER SET/CHECK.

6 Press EXECUTE.
The TIMER SET/CHECK display appears.

7 Press EXECUTE to return to the original screen.

8 Press TIMER REC (ON/OFF) to return to timer recording standby mode.
The TIMER REC (recording) indicator turns on in the display window of the VCR.

Notes

- If you set a program to record only one time, that setting is erased from the TIMER SET/CHECK display when the recording has finished.

- To check the timer settings during timer recording, follow steps 3 to 6.

Changing or Cancelling the Timer Settings

Before You Begin

- Use ▲ and ▼ to move the cursor (▶).
- Use ◀ and ▶ to select items.

Here's how to change or cancel any timer settings from the TIMER SET/CHECK display.

1 Display the TIMER SET/CHECK menu on the TV screen by following the procedures in "Checking the Timer Settings" on page 32.

2 Press ▲ or ▼ to move the cursor (▶) to the program you want to change or cancel.

3 To change a program, select the item to be changed by pressing ◀ or ▶, then make changes by pressing ▲ or ▼.
   To cancel it, press TIMER CLEAR.
   Repeat this step to change or cancel other settings.

4 Press EXECUTE to store the changes and return to the orginal screen.

5 Press TIMER REC (ON/OFF) to put the VCR in timer recording standby mode.
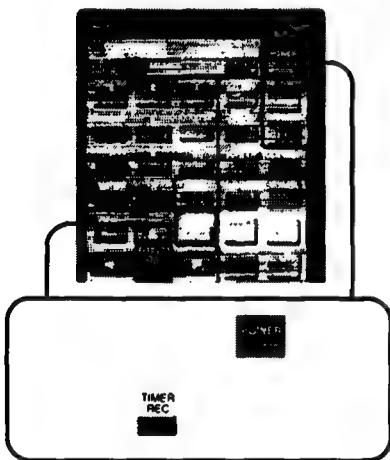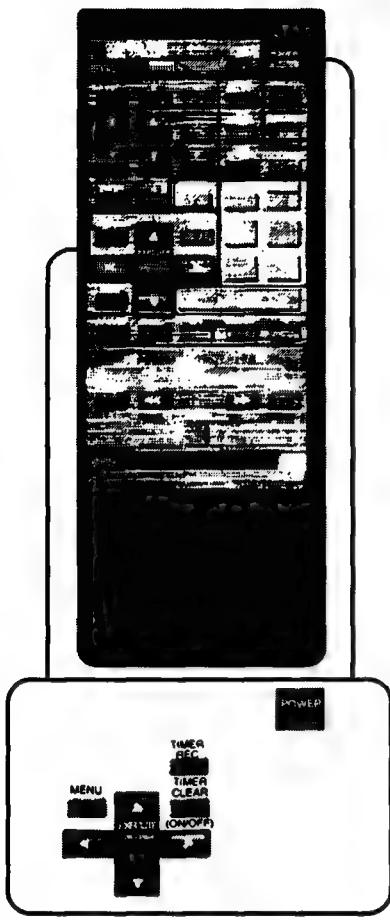
Using the VCR Before Timer Recording Starts

If you want to use your VCR while it's in timer recording standby mode, you must first turn off the TIMER REC (recording) indicator in the display window of the VCR.

1 Press TIMER REC ON/OFF.
   The TIMER REC (recording) in the display window turns off and the VCR leaves timer recording standby mode.

2 Press POWER.
   The VCR is ready to use.

3 After using the VCR, press TIMER REC (ON/OFF).
   The VCR returns to the timer recording standby mode.

Variable Speed Playback

▶ PLAY

▮▮ PAUSE

DUAL MODE
SHUTTLE ring
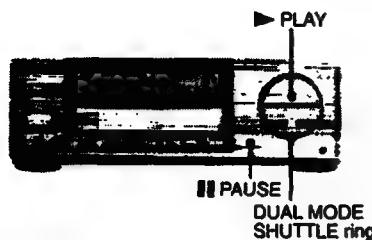
The following section explains the advanced playback functions available on your VCR.

Using the DUAL MODE SHUTTLE ring on the VCR, you can play a cassette at a variety of forward and reverse speeds. You can also freeze a picture using the pause function.

Still Picture

During playback, press ▮▮ PAUSE to hold the picture in one place.

To resume normal playback, press either ▶ PLAY or ▮▮ PAUSE.

If you leave your VCR in pause mode, normal playback resumes after approximately 7 minutes.
If a still picture shakes up and down, you can adjust it on the TRACKING ADJUST menu. (See "Adjusting Tracking During Variable Speed Playback" on page 36.)

Picture Search During Playback

VCR: Turn the DUAL MODE SHUTTLE ring clockwise or counterclockwise. When you release your fingers from the ring, normal playback will resurme.

Remote Commander: Press ▶▶ FF or ◀◀ REW.
When you release your finger from the button, normal playback will resume.

Locked Picture Search

This feature works only when using the Remote Commander.

Press SEARCH on the Remote Commander during playback or playback pause. If you press the left SEARCH button, the VCR enters locked picture search mode in the reverse direction. If you press the right SEARCH button, the VCR enters locked picture search mode in the forward direction.

To return to normal playback
Press ▶ PLAY.

Notes on playback in SP mode

• When viewing the picture in variable speed playback mode, the picture may shake vertically or the color may become black and white, depending upon the TV you are using.
• During picture search mode, several streaks appear on the TV screen. This is normal.
A wider streak will appear on the TV screen during picture search mode as compared to tapes recorded in LP mode.
• If you perform picture search with the VCR connected to your TV via RF OUT, a sound such as a buzzing sound may slightly be heard.
• When you perform a variable speed playback in the reverse direction, a wider streak appears on the screen, especially in SP mode. This is normal.

►PLAY

DUAL MODE
SHUTTLE ring

< DIRECTION >

X2

PLAY

Notes

• It takes about two or three seconds to reverse the direction in slow motion mode or frame-by-frame mode.
• When the tape speed is switched, noise appears a moment.
• If a tape has portions recorded in both SP and LP modes, the VCR will automatically adjust; however, the playback speed during reverse/forward slow motion playback, and x2 playback is not changed even though the tape speed is actually switched SP to LP or LP to SP.

x 2, –x 2 Speed Playback

Using the VCR:
Slowly turn the DUAL MODE SHUTTLE ring clockwise (in the forward direction) or counterclockwise (in the reverse direction) until the x2 (forward double-speed playback) or –x2 (reverse double-speed playback) indicator appears on the TV screen.

To return to normal playback
Release your fingers from the ring.

Using the Remote Commander:
Press x2.

To play back in the reverse direction
Press < DIRECTION.

To resume the forward direction
Press DIRECTION >.

To return to normal playback
Press ► PLAY.

If you do not want to listen to the sound during x2 mode
Select OFF on the SET UP MENU(for details, see "Using the SET UP MENU" on page 22).

The sound is muted during reverse double-speed playback.

–x 1 Playback

Using the VCR:
Gently turn the DUAL MODE SHUTTLE ring counterclockwise until the VCR enters reverse slow motion playback mode. After a slow motion picture appears on the TV screen, you can view a –x 1 playback picture. Hold the DUAL MODE SHUTTLE ring at that point.

Using the Remote Commander:
Press ► PLAY, then < DIRECTION.

Auto Play

You can start playback automatically after rewinding a cassette.
This operation works only on the VCR. (You cannot use AUTO PLAY with the Remote Commander.)

Press ► PLAY while you turn the DUAL MODE SHUTTLE ring counterclockwise fully.

Playback starts automatically after the tape is rewound to the beginning of the tape.

Frame-by-Frame Picture

During playback pause, press DIRECTION > to advance the picture one frame or < DIRECTION to reverse the picture one frame.

Each time you press the button, the picture moves one frame. To resume normal playback, press ► PLAY.

Slow Motion Playback

Using the VCR:
Slowly turn the DUAL MODE SHUTTLE ring clockwise (in the foward direction) or counterclockwise (in the reverse direction) until the SLOW (forward slow motion playback) or · SLOW (reverse slow motion playback) indicator appears on the TV screen.

To return to normal playback
Release your fingers from the ring.

Using the Remote Commander:
Press ▶ SLOW.

To play back in the reverse direction
Press ◁ DIRECTION.

To resume the forward direction
Press DIRECTION ▷.

To return to normal playback
Press ▶ PLAY.

If you leave the VCR in slow motion mode for more than approximately 30 seconds, the VCR will automatically return to normal playback.

Adjusting Tracking During Variable Speed Playback

This adjustment works during only still picture, slow motion playback and x 2 speed playback.

1 Press MENU.
  The main MENU appears.

2 Press ▲ or ▼ to move the cursor to TRACKING ADJUST.

3 Press EXECUTE.
  The TRACKING ADJUST menu appears.

4 Press ▲ or ▼ to move the cursor (▶) to the item you want.

5 Press ◀ or ▶ to move ■ in the tracking bar so that you will obtain the best possible picture on the screen.

6 Press EXECUTE.
  The TRACKING ADJUST menu disappears.

Shift this until you obtain the best possible picture
Tracking bar
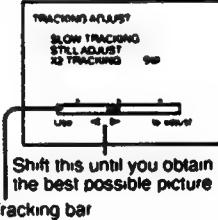
Notes

- If the tracking bar is shifted too much, noise in the picture becomes too unstable to adjust. In this case, reset to the center.
- If the VCR is in stop mode, the tracking bar will not appear on the TV screen. Since you cannot adjust tracking, put the VCR in slow motion playback mode, still mode or x2 speed playback mode to adjust tracking.
- It is necessary to adjust tracking for both the SP and LP modes.

Quick-Timer Recording

CHANNEL +/-

TIMER REC ON/OFF

QUICK TIMER
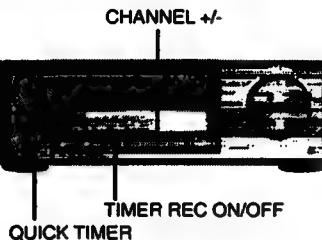
This feature lets you record programs without going through the entire time-setting procedure. Note, however, that it provides only an approximate setting for the program you wish to record.

Before You Begin

* Make sure that the clock has been set correctly.
* Check to see that the TIMER REC indicator is not lit in the display window of the VCR.

Operation

If you're currently recording, skip to step 7.

1 Insert a cassette into your VCR.

**2** Press INPUT SELECT on the Remote Commander to select the recording source from the tuner input or line input. If you selected the tuner input, the channel number lights in the display window of the VCR. If you selected the line input, the LINE indicator lights in the display window of the VCR.

3 Select the desired recording speed (SP or LP) by pressing TAPE SPEED on the Remote Commander.

4 Press QUICK TIMER on the VCR.
If you insert a cassette with the safety tab slid out, your VCR will eject the cassette.

5 Select the channel you wish to record using CHANNEL +/− if you selected the tuner input.
The channel can be changed while the channel indicator is blinking (for about 25 seconds).

6 Press QUICK TIMER on the VCR again to start recording.

7 Select the recording duration by pressing QUICK TIMER on the VCR to change the duration indicator in the display window.
Each time you press QUICK TIMER, the recording duration increases by 30 minutes (up to 5 hours).

```
    ┌──── 0:00 ──────→ 0:30 ──────→ 1:00 ·····┐
    │                                          ┊
    └──────────── 5:00 ←··················┘
```
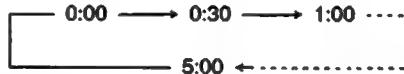
Once recording has finished, your VCR will turn off automatically.
During quick-timer recording, the recording time can be changed by pressing the QUICK TIMER button. During recording, the time displayed will count down in the units of the minute.

To stop quick-timer recording
Press TIMER REC ON/OFF.

INPUT SELECT

TAPE SPEED CHANNEL

TIMER REC

* **If your cassette ends during quick-timer recording**
  Recording stops and the VCR turns off. The cassette will not rewind automatically.
* **If power interruption occurs during quick-timer recording**
  Recording will stop and your VCR will turn off. If the interruption lasts less than one hour and the power is restored before the recording end time, recording will start again from that point.
* The quick-timer recording feature does not work during timer recording standby mode.

Buttons Operable During Quick-Timer Recording

TIMER REC (ON/OFF)	To stop quick-timer recording.
QUICK-TIMER	To change recording duration.
COUNTER RESET	To reset the counter to zero.
TV/VTR	To watch the picture broadcast on another channel (TV).

Setting the Sleep Timer

This feature allows you to have the VCR turn off at the preset time automatically. You can preset the time in units of 30 minutes (up to 5 hours). Using this function, it is not necessary to wait until the entire recording has finished.

Before You Begin

- Use ▲ and ▼ to move the cursor (▶).
- Use ◀ and ▶ to set the preset time.
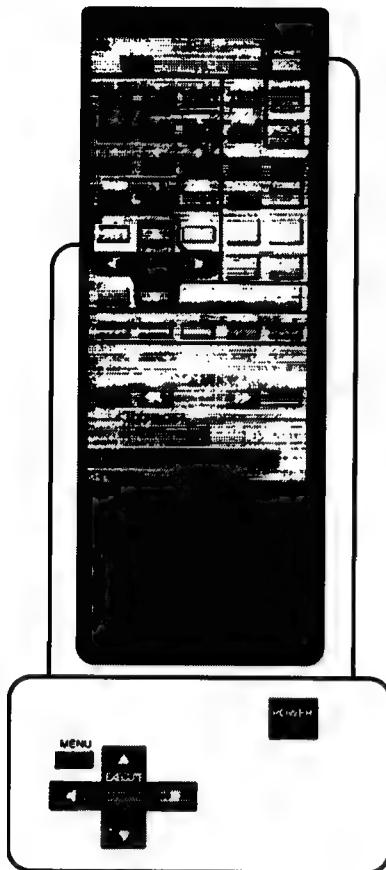
1 Press MENU.
The main MENU appears.
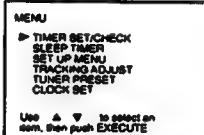
2 Press ▲ or ▼ to move the cursor to SLEEP TIMER.

3 Press EXECUTE.
The SLEEP TIMER menu appears.
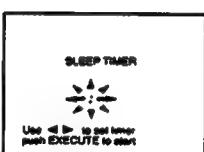
4 Press ◀ or ▶ to set the preset time.
Press ▶ to increase the preset time.
Press ◀ to decrease the preset time.

$$\leftarrow \blacktriangleleft \ \ \blacktriangleright \rightarrow$$

```
  ┌─ 5 : 00 ←→ – : – – ←→ 0 : 30 ←→ 1 : 00
  │                                      ↑
  └─ 4 : 30 ←→ ⋯ 2 : 30 ←→ 2 : 00 ←→ 1 : 30
```

5 Press EXECUTE to start the sleep timer.
The indication "SLEEP TIMER" and the time you've just preset will appear on the TV screen.
When you press EXECUTE, the time displayed will count down in units of one minute.
The preset time will also appear in the display window of the VCR.

(When the preset time is set to 0:30)
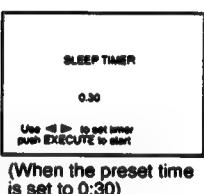
To cancel the sleep timer

Press POWER or press ◀ or ▶ in step 4 to set the timer to – : – –, then press EXECUTE.
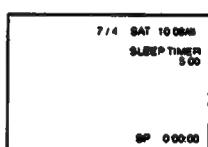
Cutting out the Unwanted Scenes – SHUTTLE EDIT

DUAL MODE SHUTTLE ring

II PAUSE
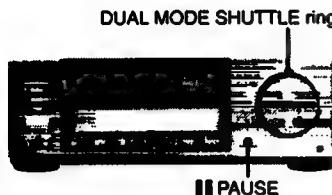
During Recording

If you wish to cut out scenes such as TV commercials, you can pause recording and rewind the tape until the beginning of an unwanted scene is reached. You can then record over it. This feature is controlled using the DUAL MODE SHUTTLE ring on the VCR. During timer-activated recording, you cannot use this function.

1 Press II PAUSE during recording.
   The VCR enters recording pause mode.

2 Turn the DUAL MODE SHUTTLE ring on the VCR counterclockwise to rewind
   the tape until the unwanted scene appears.

Program   TV commercial

Present position

Position to be cut out
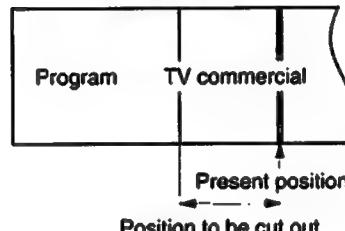
Turn the ring slightly. During rewinding, the screen changes to the playback picture, but sound is not switched. When you release the ring, the VCR enters recording pause mode.

3 Press II PAUSE when a scene you want to start cutting out appears on the
   screen.
   Recording starts.

COUNTER RESET
● REC
CHANNEL +/-
DUAL MODE SHUTTLE ring

‖PAUSE ■STOP

During Playback

You can re-record onto an unwanted portion of a pre-recorded cassette using the DUAL MODE SHUTTLE ring on the VCR.

1 Press ‖ PAUSE at the end of the unwanted scene during playback.
The VCR enters playback pause mode.

2 Press COUNTER RESET to set the linear counter to "0H00M00S".

3 Turn the DUAL MODE SHUTTLE ring on the VCR until the beginning of the unwanted scene appears on the screen.
When you release the ring, the VCR enters playback pause mode. Use < DIRECTION > on the Remote Commander to rewind or advanced the picture frame by frame for searching more specific points.

4 Press ● REC.
The VCR enters recording pause mode.

5 Select a new program for re-recording.
Select the channel or change the input by pressing CHANNEL + / − or INPUT SELECT on the Remote Commander.

6 Press ‖ PAUSE when the scene to be recorded begins to appear on the screen.
Recording begins.

7 Press ■ STOP when the linear counter shows "0H00M00S".
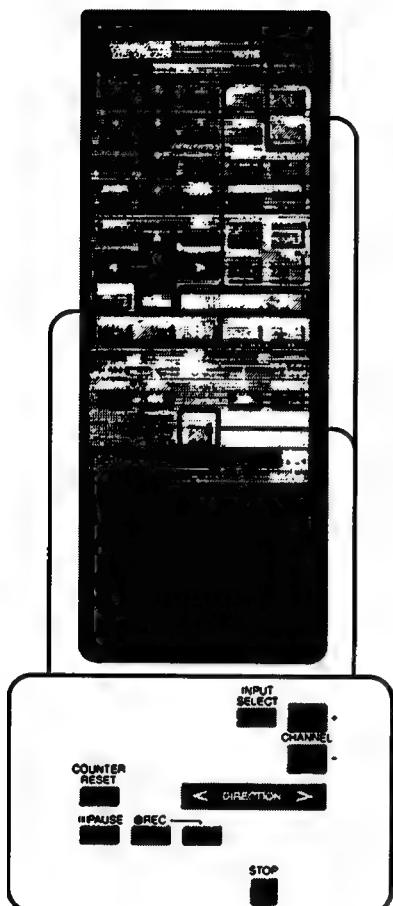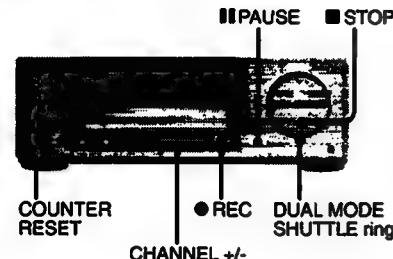
Note
The picture may be distorted a moment at the cut-out point (recording end point).

Overview of the Editing Functions

Using a second VCR, you can record programs from one VCR to the other. The following are the tape editing functions available on the VCR.

- **To make a copy of a tape**
→ See "Tape Dubbing" on page 43.

Original tape   Copy of tape

- **To edit out unwanted scenes**
→ See "Assemble Editing" on page 47.

Cut out   Cut out

Original tape

Edited tape
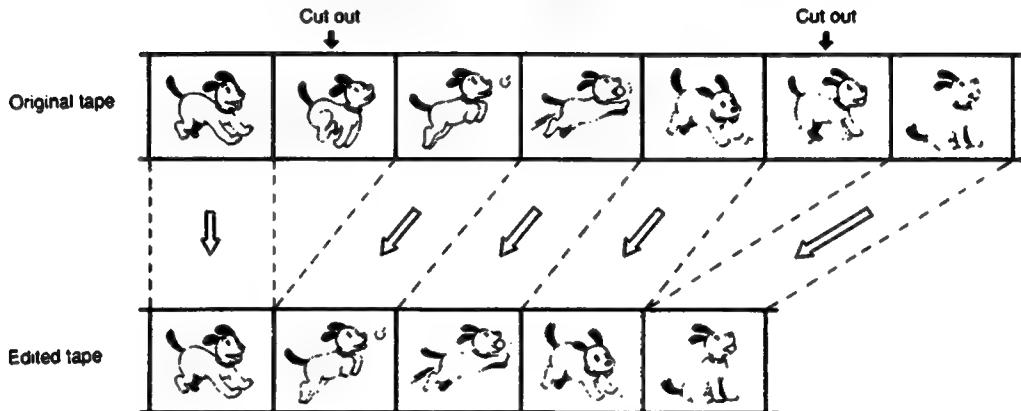
- **To insert another scene into a tape**
→ See "Insert Editing" on page 48.

Starting point   Ending point

Original tape

Starting point   Ending point

Edited tape
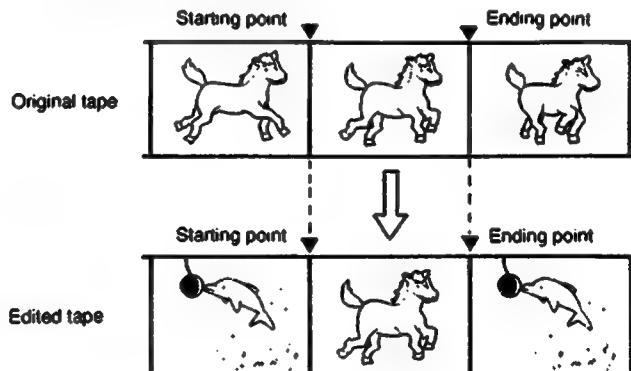
- **To edit tapes using the synchronized editing function**
→ See "Synchronized Editing" on page 49.
    You can also use the synchronized editing function to perform assemble editing and insert editing if your other VCR has a control L connector. Using this function controls both the playback VCR and the recording VCR simultaneously.

Tape Dubbing

Editing from the Other VCR

Here's how to edit from another VCR (such as an 8mm video camera recorder or a VHS-format VCR for playback) when using this VCR for recording.

Connection
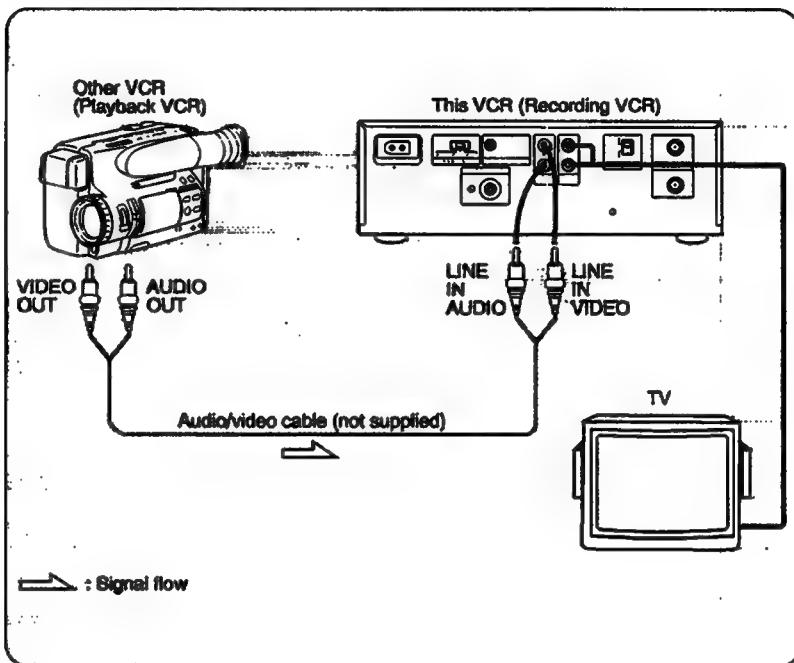
Notes

- When connecting the VCRs, do not connect both LINE IN and LINE OUT jacks on your VCRs simultaneously. Doing so may cause a humming noise.
- To avoid deterioration of picture quality, remember to switch on the EDIT function of the other VCR if the EDIT function is provided with that VCR.
- If your playback VCR is a stereo unit, make connections using the VCM-910MS/920MS cable (not supplied).

This VCR
(Recording VCR)   ● REC ■STOP

■ PAUSE

Other VCR
(Playback VCR)

Before You Begin

- Select the tape speed (SP or LP) with TAPE SPEED on the Remote Commander
- Press INPUT SELECT on the Remote Commander to select LINE IN.
  The LINE indicator lights up in the display window of the VCR.
- Press EDIT on the VCR.

Note
If your playback VCR also has an editing function, select it to reduce static and improve reception.

Operation

1 Insert a blank cassette into this (recording) VCR.

2 Turn on the other (playback) VCR and insert a source cassette.

3 Locate the playback starting point and select the playback pause mode on the other VCR.

4 Locate the recording starting point and select the recording pause mode on this VCR.

5 Press ■ PAUSE on both VCRs.
   For best result, press ■ PAUSE on the other VCR just before pressing ■ PAUSE on this VCR.
   When you've finished editing, press ■ STOP on both VCRs.

Editing onto the Other VCR

Here's how to edit from this VCR (as the playback VCR) onto the other VCR (as the recording VCR).

This VCR (Playback VCR)

TV

LINE OUT VIDEO LINE OUT AUDIO

Other VCR (Recording VCR)

AUDIO IN VIDEO IN

Audio/video cable (not supplied)

:Signal flow
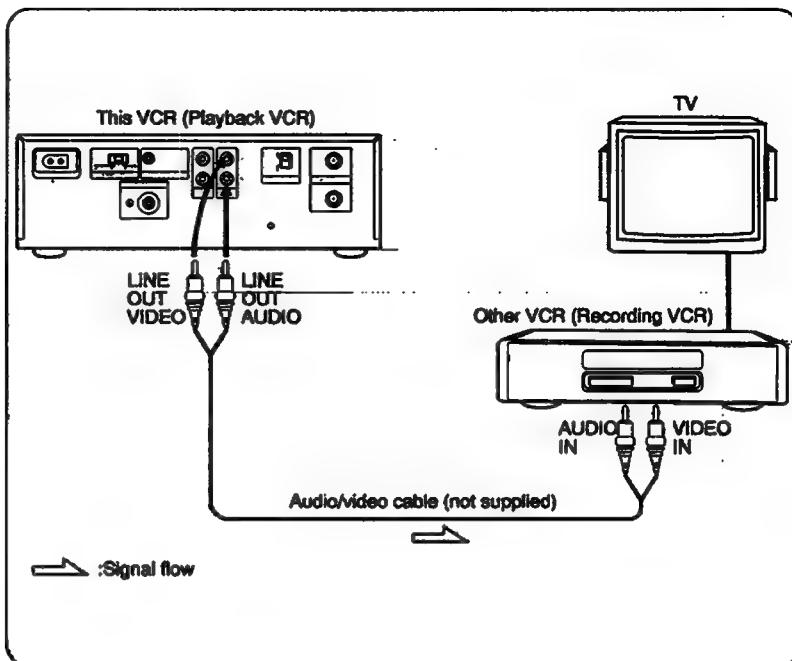
Before You Begin

• Press EDIT on this VCR.

If the other VCR has an editing function, it should also be selected to improve reception.

• Press DATA SCREEN to turn off the data screen. Otherwise, the data screen will be recorded.

This VCR (Playback VCR)

► PLAY
■ STOP
II PAUSE

Other VCR (Recording VCR)

Operation
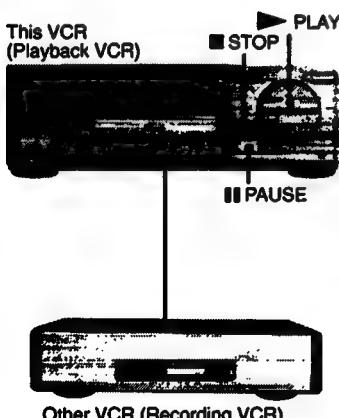
1 Turn on the other (recording) VCR and insert a blank cassette.

2 Insert a source cassette into this (playback) VCR.

3 Locate the playback start point and select the playback pause mode on this VCR.

4 Locate the recording start point and select the recording pause mode on the other VCR.

5 Press II PAUSE on both VCRs.
For best results, press II PAUSE on this VCR just before pressing II PAUSE on the other VCR. When you've finished editing, press ■ STOP on both VCRs.

Assemble Editing/Insert Editing

When connecting to the equipment with the LANC connector, you can take advantage of the synchronized editing function. For the synchronized editing operation, see page 49.

Connection
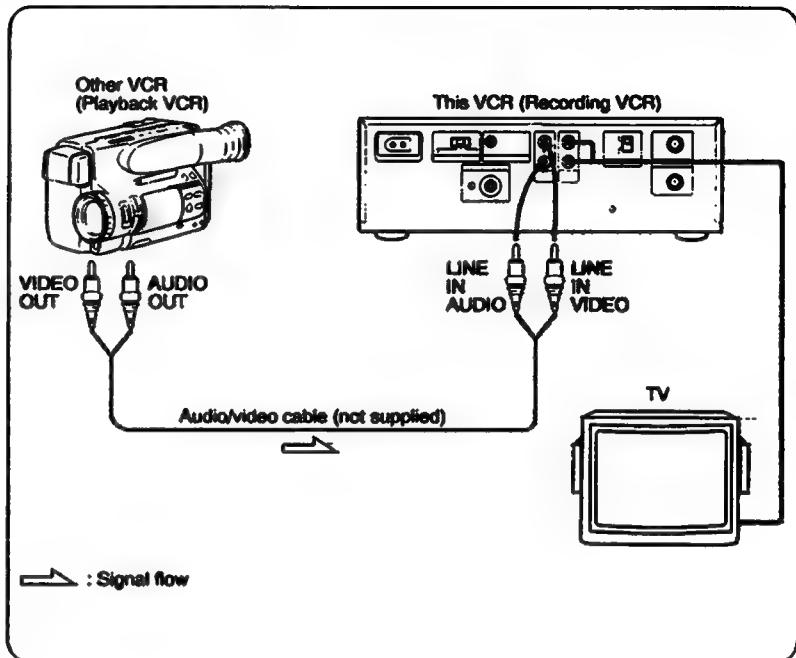
Notes
- When connecting the VCRs, do not connect both LINE IN and LINE OUT jacks on your VCRs simultaneously.
- If your playback VCR is a stereo unit, make connections using the VCM-910MS/920MS cable (not supplied).
- To avoid deterioration of picture quality, remember to switch on the EDIT function of the other VCR if the EDIT function is provided with that VCR.

Assemble Editing

Before You Begin

- Select the tape speed (SP or LP) with TAPE SPEED on the Remote Commander.
- Press INPUT SELECT on the Remote Commander to select LINE IN.
  The LINE indicator lights up in the display window of the VCR.

Tape on the playback VCR
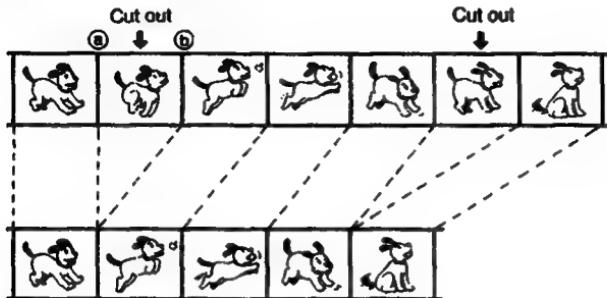
Tape on the recording VCR

Operation

1 Insert a recorded cassette into the other (playback) VCR and a cassette for recording into this (recording) VCR.

2 Record on this VCR while viewing the playback picture of the other VCR and have the VCR enter recording pause mode at the point (point ⓐ) where you want to cut out.

3 Release the recording pause at the point where you want to start recording again (point ⓑ).

4 Repeat steps 2 and 3 to make a newly composed tape.
When you've finished editing, press ■ STOP on both VCRs.

Insert Editing

Before You Begin

- Select the tape speed according to the tape speed in whcih the recorded cassette was done.
- Press INPUT SELECT on the Remote Commander to select LINE IN. The LINE indicator lights up in the display window of the VCR.

Tape on the playback VCR

Starting point ⓑ   Ending point ⓐ

Tape on the recording VCR

Operation

1 Insert a recorded cassette into the other (playback) VCR and a cassette for recording into this (recording) VCR.
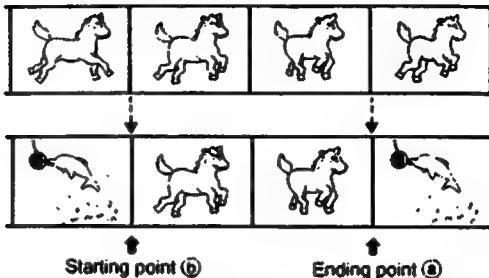
2 Locate the editing end point (ⓐ) by playing back the cassette on this VCR and press the COUNTER RESET button.
The counter reads "0H00M00S".

3 Rewind the tape on this VCR and put the VCR in recording pause mode at the editing start point (ⓑ).

4 Play back on the other VCR and put it in playback pause mode at the point where the picture to be inserted appears on the screen.

5 Release recording pause mode of this VCR and playback pause mode of the other VCR simultaneously.

6 Press the STOP button of this VCR to stop the recording at the editing end point (counter reading reaches to 0H00M00S) set in step 2.

7 Press the STOP button of the other VCR to stop the playback.

Note
If you play back a tape on which insert editing was performed, the picture may be distorted at the ending point of insert editing.

Synchronized Editing

If your other VCR has a control L connector, you can take advantage of a feature called "Synchronized Editing" that controls both VCRs (recording VCR and playback VCR), and releases the pause when the SYNCHRO EDIT button is pressed. To use this function, you must connect the control cable (LANC cable) in addition to the connections of the audio and video cables. There are two types of control cables: control L (REMOTE) cable and control S cable according to the type of connectors of the VCRs.

After you have made connections on page 50, you must set the LANC MODE. For details, see page 52.

Setting the LANC MODE

When you perform synchronized editing remember to set the LANC MODE as described below:
For details, refer to page 52. Be sure this setting is correct before you begin editing, since it decides which VCR controls which.

When you want to control the other VCR from this VCR

This VCR

Press MENU to display main MENU on the TV screen and then select SET UP MENU to display SET UP MENU.

```
SET UP MENU

  AUTO ANT SEL    •AUTO  MAN
► LANC MODE        M     S
  X2 AUDIO        •ON    OFF
  CLOCK DISPLAY   •ON    OFF
  BACK COLOR      •BL GR PK

Use ▲ ▼ to select an
item, then push ◄ ►
```

Select "M" for LANC MODE choice.

Press EXECUTE.

Other VCR

Select "S" for LANC mode setting.
For the video camera recorders such as CCD-TR series, the LANC mode is always set to "S".

When you want to control this VCR from the other VCR
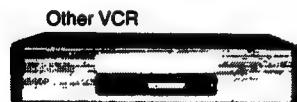
Other VCR

Select "M" for LANC mode setting.
If you cannot set the LANC mode setting on the other VCR, you cannot control this VCR from the other VCR. See the instructions manual supplied with the other VCR.

This VCR

Press MENU to display main MENU on the TV screen and then select SET UP MENU to display SET UP MENU.

```
SET UP MENU

  AUTO ANT SEL    •AUTO  MAN
► LANC MODE        M     S
  X2 AUDIO        •ON    OFF
  CLOCK DISPLAY   •ON    OFF
  BACK COLOR      •BL GR PK

Use ▲ ▼ to select an
item, then push ◄ ►
```
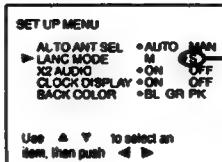
Select "S" for LANC MODE choice.

Press EXECUTE.

Connecting Video Equipment with the LANC connector
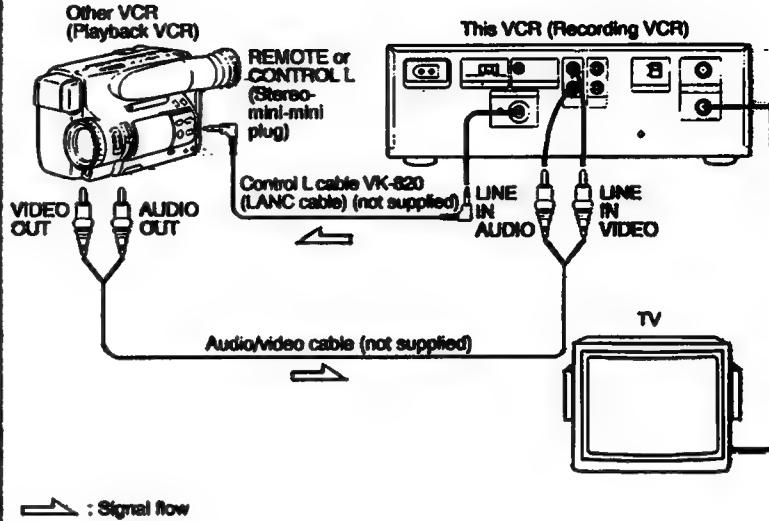
Other VCR (Playback VCR)

This VCR (Recording VCR)

REMOTE or CONTROL L (Stereo-mini-mini plug)

Control L cable VK-820 (LANC cable) (not supplied)

VIDEO OUT

AUDIO OUT

LINE IN AUDIO

LINE IN VIDEO

TV

Audio/video cable (not supplied)

: Signal flow

Notes

• When connecting the VCRs, do not connect both LINE IN and LINE OUT jacks on your VCRs simultaneously. Doing so may cause a humming noise.

• If your playback VCR is a stereo unit, make connections using the VCM-910MS/920MS cable (not supplied).

• If another VCR has both the LANC connector and the CONTROL S connector, use the LANC connector. Do not make the LANC and CONTROL S connections simultaneously.

About the ⏻ (LANC)

LANC stands for Local Application Control System.

The LANC connector is used for controlling the tape transport of video equipment and peripherals connected to it. This connector has the same function as the connectors indicated as CONTROL L or REMOTE.

Connecting Video Equipment with the CONTROL S connector

This VCR (Playback VCR)

TV

CONTROL S
IN

LINE
OUT
VIDEO

LINE
OUT
AUDIO

Other VCR (Recording VCR)

AUDIO
IN

VIDEO
IN

Audio/video cable (not supplied)

CONTROL S cable RK-G69 (not supplied)

CONTROL S OUT

:Signal flow
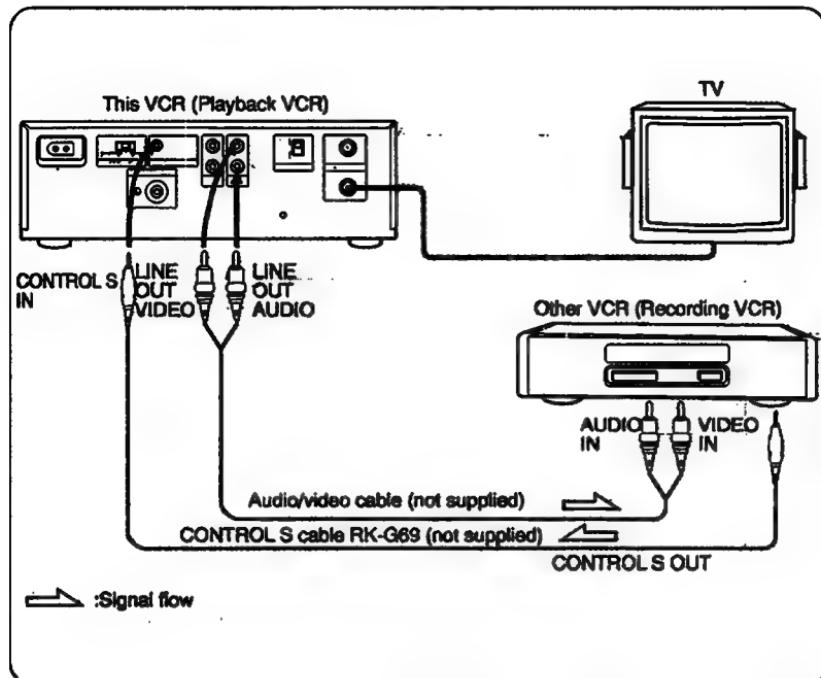
When using the CONTROL S cable

Set the commander mode of this VCR and the other video equipment to the same position.
If the other video equipment has the synchronized function, use the SYNCHRO EDIT button on other equipment.
The synchronized editing using the CONTROL S connector is the same as the synchronized editing using the LANC connector. This enables you to pause both VCRs and release the pause mode of both VCRs.
You can only perform synchronized editing using the CONTROL S IN jack when the other VCR has the CONTROL S OUT jack.

LANC MODE Setting

After you have made the control L cable connection, you must perform the LANC MODE setting. Use the SET UP MENU for this setting. For how to call up the SET UP MENU and set items, see page 22.

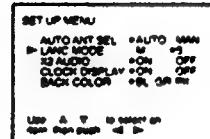**1** Press MENU to call up the SET UP MENU.

2 Move the cursor to LANC MODE.
Set LANC MODE.

LANC MODE setting
M: to control the other VCR with this VCR.
S: to control this VCR with the other VCR.

3 Press EXECUTE to return to the original screen.

Note
Do not make the CONTROL L connection between this VCR and the other VCR with the LANC mode settings of both VCRs set to the same position "S".

SYNCHRO
EDIT
● REC
❚❚ PAUSE

Other VCR
(Playback VCR)

Synchronized Assemble Editing

Before You Begin

- Press TAPE SPEED on the Remote Commander to select the tape speed (SP or LP).
- Press INPUT SELECT on the Remote Commander to select LINE IN.
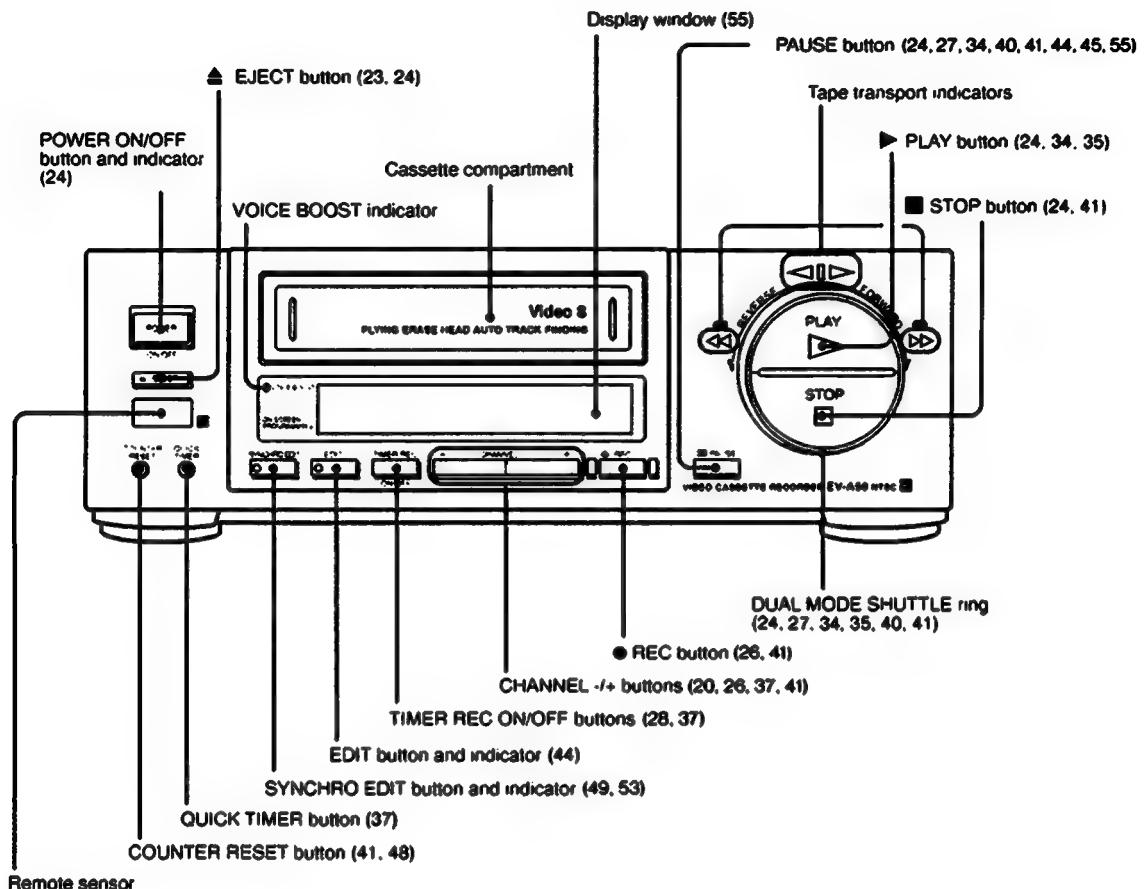- Check the LANC MODE setting (see page 52).

Operation

1 Insert a recorded cassette into the other (playback) VCR and a cassette for recording into this (recording) VCR.

2 Locate the recording start point on this VCR and put the VCR in recording pause mode.

3 Locate the beginning of the scene to be edited out on the other VCR and put the VCR in playback pause mode.

4 Press the SYNCHRO EDIT button on this VCR. The SYNCHRO EDIT indicator lights up.
Pause mode of both the recording VCR and the playback VCR is released to start editing.

5 Press the SYNCHRO EDIT button on this VCR at the point where you want to stop recording.
This VCR enters recording pause mode, and the other VCR enters playback pause mode.

6 If you have another scene you want to edit, repeat steps 3 to 5.

7 After editing has completed, press the STOP button on both VCRs.

During synchronized editing
The edit function is activated automatically.
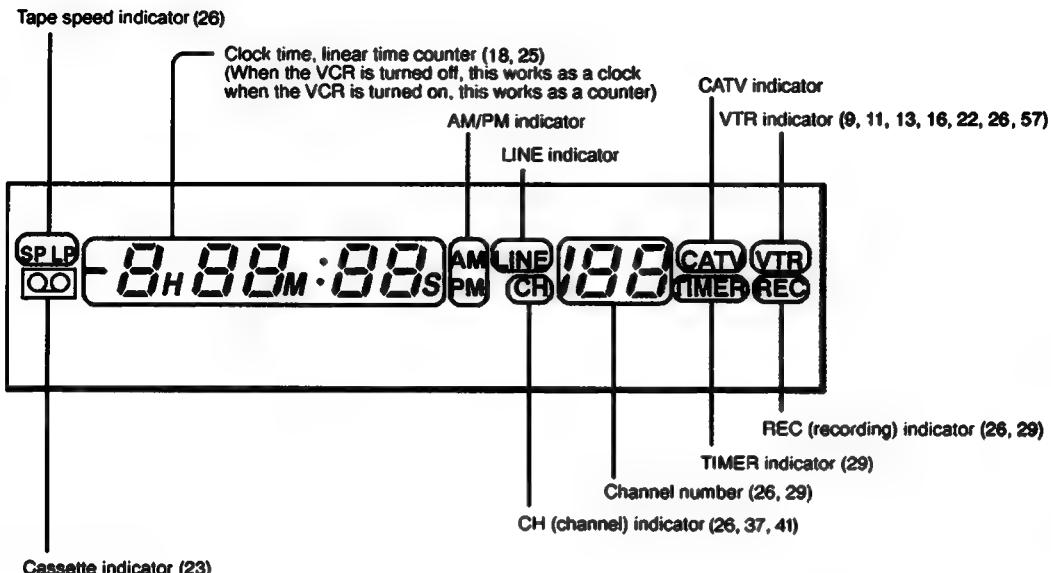
Identifying the Parts and Controls

Front Panel

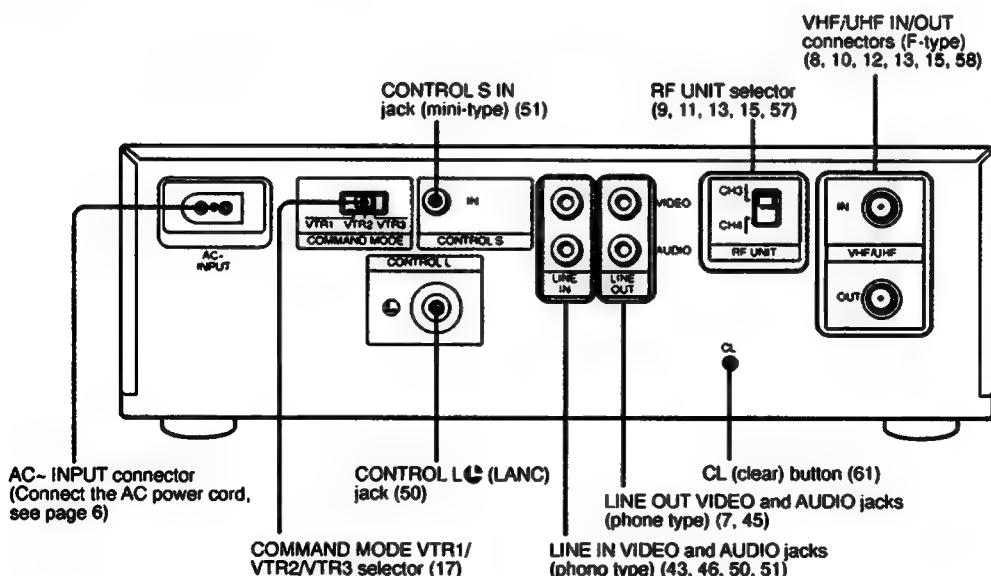The function of each control is explained on the page indicated in parentheses ( ).

Display window (55)

PAUSE button (24, 27, 34, 40, 41, 44, 45, 55)

Tape transport indicators

▲ EJECT button (23, 24)

POWER ON/OFF button and indicator (24)

▶ PLAY button (24, 34, 35)

Cassette compartment

VOICE BOOST indicator

■ STOP button (24, 41)

Video 8

FLYING ERASE HEAD AUTO TRACK FINDING

PLAY

STOP

VIDEO CASSETTE RECORDER EV-A50 NTSC

DUAL MODE SHUTTLE ring (24, 27, 34, 35, 40, 41)

● REC button (26, 41)

CHANNEL -/+ buttons (20, 26, 37, 41)

TIMER REC ON/OFF buttons (28, 37)

EDIT button and indicator (44)

SYNCHRO EDIT button and indicator (49, 53)

QUICK TIMER button (37)

COUNTER RESET button (41, 48)

Remote sensor

Display Window

Each indicator is explained on the page indicated in parentheses ( ).

Tape speed indicator (26)

Clock time, linear time counter (18, 25)
(When the VCR is turned off, this works as a clock
when the VCR is turned on, this works as a counter)

AM/PM indicator

LINE indicator

CATV indicator

VTR indicator (9, 11, 13, 16, 22, 26, 57)

REC (recording) indicator (26, 29)

TIMER indicator (29)

Channel number (26, 29)

CH (channel) indicator (26, 37, 41)

Cassette indicator (23)

Rear Panel

The function of each control is explained on the page indicated in parentheses ( ).

VHF/UHF IN/OUT
connectors (F-type)
(8, 10, 12, 13, 15, 58)

CONTROL S IN
jack (mini-type) (51)

RF UNIT selector
(9, 11, 13, 15, 57)

AC~ INPUT connector
(Connect the AC power cord,
see page 6)

CONTROL L ℄ (LANC)
jack (50)

CL (clear) button (61)

LINE OUT VIDEO and AUDIO jacks
(phone type) (7, 45)

COMMAND MODE VTR1/
VTR2/VTR3 selector (17)

LINE IN VIDEO and AUDIO jacks
(phono type) (43, 46, 50, 51)

Remote Commander

The function of each control is explained on the page indicated in parentheses ( ).

COMMAND MODE VTR1/VTR2/VTR3 selector (17)

Channel number buttons and ENTER button (20, 26)

TIMER REC (ON/OFF) button (29, 32, 33, 37)

Menu operation buttons
MENU button
◄ , ► , ▲ , ▼ (cursor) buttons
EXECUTE button

COUNTER RESET button (25)

❚❚ PAUSE button (24, 27)

● REC buttons (26)

Press the two buttons simultaneously

Tape transport buttons
(24, 26, 34-36)
◙ ◙ SEARCH (reverse/forward),
◄◄ REW (rewind),
►► FF (fast forward),
► PLAY (playback),
■ STOP

TIMER CLEAR button (33)

TV/VTR button (26, 27)

INPUT SELECT button (29, 37, 41)

POWER button (24, 32, 33, 39, 57)

TAPE SPEED button (26, 37)

CHANNEL -/+ buttons (20, 26, 37, 41, 57)

DATA SCREEN button (25)

VOICE BOOST button (25)

TV operations buttons
Can be used to control Sony TV sets bearing the ▇ mark
TV POWER button
TV/VIDEO button
Press to switch to a video recorder connected to the video/audio inputs of the TV set
(This function is available only with certain TV channels)
CHANNEL +/- buttons
Press to select the TV channel
VOL (volume) +/- buttons
Press to control the TV volume

<DIRECTION> buttons (35, 36, 41)

X2 (double speed) button (35)

❚► SLOW button (36)

General Setup Information

Setting the RF UNIT

POWER

CHANNEL +/-

If you connect a TV or color monitor equipped with A/V input jacks, skip this adjustment.

Why this setting is necessary:
You must set the RF UNIT selector at the rear of the VCR properly so that your TV can receive the correct signal from the VCR. Set the selector to CH3 (Ch 3) or CH4 (Ch 4), whichever is not active in your area.

1 Set the RF UNIT at the rear of the VCR to CH3 or CH4, whichever is not used in your area.

2 Press POWER.
The power indicator lights up on the front panel.

3 Press TV/VTR on the Remote Commander.
The VTR indicator lights up in the display window of the VCR.

4 Check that the channel number is illuminated in the display window, then select an active channel in your area by pressing CHANNEL +/−.

5 Turn on your TV and set it to the channel you selected in step 1.
Your TV is now tuned to the VCR. Whenever you use the VCR, set the TV to the preselected channel.

> **Note:**
> For details on adjusting TV channels, see your TV instruction manual.

Attaching an F-type Connector (not supplied)

1 Strip 17 mm (11/16") of the black polyvinyl jacket.
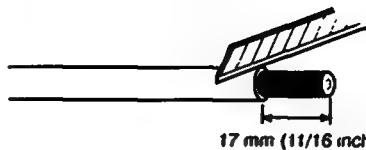
17 mm (11/16 inch)

2 Fold back the woven wire.
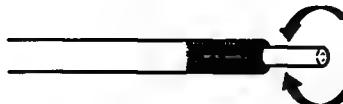
3 Strip 12 mm (1/2") of the white plastic casing, leaving 12 mm of the center conductor.

12 mm (1/2 inch)

4 Slip the crimping ring over the cable.

5 Insert the inner conductor into the F-type connector shaft and push the end of the cable into the connector as far as it will go.
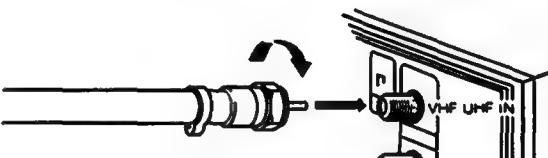
F-type connector

6 Slide the crimping ring over this assembly. Pinch the crimping ring with pliers to hold the connection in place.

Clmp
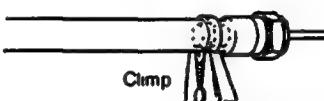
7 Cut the center conductor leaving 3 mm (1/6") from the end.

3 mm (1/6inch)
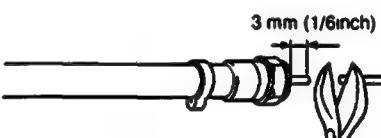
8 Insert the F-type connector into VHF/UHF IN plug on the VCR.

VHF UHF IN

Attaching the External Antenna Connector (supplied)

300 ohm twin lead cable

Screws

1 Loosen the screws on the antenna connector.

2 Fit the 300-ohm twin lead cable on the UHF antenna under the screws on the antenna connector.

3 Retighten the screws.
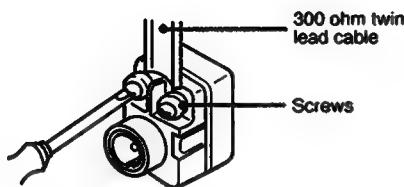
Attaching the EAC66 U/V Band Separator/Mixer (not supplied)

VHF/UHF-IN

300 ohm twin lead cable

EAC-66

75 ohm coaxial cable

1 Loosen the screws on the U/V band separator/mixer.

2 Fit the 300-ohm twin lead cable on the UHF antenna under the screws.

3 Connect the 75-ohm coaxial cable to the U/V band separator/mixer.

4 Connect the U/V band separator/mixer to the VHF/UHF IN plug on the VCR.

Troubleshooting

If you have a problem with your VCR, first check the power cord connection, then go through the following list. Should the difficulty persist, unplug the unit and contact your Sony dealer or local authorized Sony Service Center facility.

	Symptom	Possible causes and remedies
Power	The POWER switch doesn't work.	● The power cord is disconnected. ● The VCR is in timer standby mode.
Time and Date Clock	The clock has stopped and "– : – –" lights up.	● There has been a power interruption. Reset the time, date and timer settings. Then transmit set data to the VCR.
TV Reception	The reception is poor.	● The channel for the VCR is not correctly tuned in to the TV. ● The TV signal is weak. Adjust the direction of the antenna. ● The AC power cord of the VCR is disconnected.
Recording and Playback	Shaky and/or snowy picture during recording.	● The TV's channel is not set to the one preset for the VCR. ● The TV signal is weak. Adjust the direction of the antenna.
	No picture on the TV screen.	● Press TV/VTR so that the VTR indication appears in the display window. ● The channel is not set to, Ch 3 or Ch 4 or the video input has not been selected at the monitor. ● Clean the video head. (See page 63)
	The VCR won't record.	● No cassette has been inserted. ● The cassette is at its end. ● INPUT SELECT is not set correctly.
	The playback picture is not clear.	● The channel for the VCR is not correctly tuned on the TV. ● The video heads are dirty. Clean the heads using the Sony V8-25 CLH Video head cleaning cassette. For details on cleaning, refer to the instructions furnished with the cleaning cassette. If a cleaning cassette is not available in your area, have the heads cleaned at your nearest Sony Service Center facility. (Do not use a commercially available wet-typed cleaning cassette. It may damage the video heads. ● The video heads are worn out.
	Noisy picture	● Place the VCR away from a TV. ● Tape is defective. Use a new cassette.
	The picture moves vertically during picture search mode.	● Adjust the vertical hold control on the TV or color monitor.
	The sound drops out.	● The cassette is defective. Use a new video cassette.
	A cassette is ejected if the REC button is pressed.	● Check the safety tab.

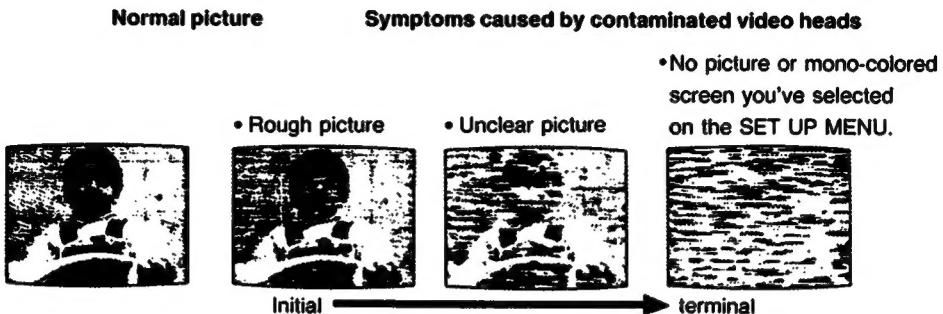|	Symptom	Possible causes and remedies
Timer Recording	Timer setting cannot be made.	● The current time has not been preset (See page 18).
	The TIMER REC (recording) indicator is not lit even though you've pressed TIMER REC (ON/OFF).	● No cassette has been inserted. ● The cassette is at its end. ● No setting for timer-recording has been made.
	The cassette is ejected when performing a timer setting.	● The safety tab of the cassette is slid out.
	Timer recording was not made.	● There has been a power interruption of one hour or more. ● TIMER REC (ON/OFF) was not pressed. ● Date and clock settings have not been set correctly.
Data Screen	The data screen does not appear on the screen.	● Press DATA SCREEN.
Others	Cassette cannot be inserted.	● A cassette has already been inserted.
	The Remote Commander cannot be operated.	● The COMMAND MODE has not been set correctly. Set the COMMAND MODE on the VCR and the Remote Commander to the same number, for example, 'VTR 2' (See page 17). ● The batteries are low.
	A help message appears on the TV screen.	● An illogical operation has been tried. See the "On-Screen Help Messages" (See page 62).
	The VCR does not respond when you press any button.	● The built-in microprocessor may be defective. Pressing the CL (clear) button on the rear panel with a pointed object such as a ballpoint pen, may fix the problem. All stored information (e.g., the clock and any preset programs) will be cleared.
	When you perform synchronized editing, you cannot control this VCR from the other VCR.	● The LANC mode of the other VCR is set to M (See page 49). ● The LANC mode of this VCR is set to S (See page 49).

On-Screen Help Messages

Please put in a cassette	Please rewind or put in a new cassette
Please stop the tape	No timer recording has been set
Please push INPUT SELECT	VCR is recording
Please set the clock	Please push TIMER REC to set timer
Timer program is full	The tape is rewound
Tab on the cassette is locked	

Taking Care of Your EV-A50

Video Head Cleaning

When playback pictures are noisy and hardly visible, or no picture or mono-colored screen appears, the video heads may be contaminated. In such a case, clean the video heads using video head cleaning tape V8-25CLH (not supplied) or ask Sony service personnel to clean the video heads.

Normal picture   **Symptoms caused by contaminated video heads**

• No picture or mono-colored screen you've selected on the SET UP MENU.

• Rough picture   • Unclear picture

Initial ———————————————————▶ terminal

Worn Video Heads

If the VCR displays a poor picture after you clean the video heads, you may need to replace them. Consult your dealer or the Sony Service Center nearest you.

Check the Video Heads after 1,000 Hours of Use

This VCR is a high-precision machine. It must record on or play back from magnetic tapes on which the image signals from the color TV or the video camcorder are recorded.

The video head or mechanical parts for transporting the tape become contaminated or worn after extended use. You should have the VCR checked (cleaning, oiling and replacing of worn parts) after each 1,000 hours of use.

Moisture Condensation

• **Main Unit**
  Do not operate the unit right after having transported it from a cold location to a warm location or in a room where the temperature rises suddenly, because moisture may condense in the operating section of the unit. Wait for about an hour before turning the power on in the new location or keep the rise in room temperature gradual. If the unit is operated with moisture condensation, the unit and the tape may be damaged.
  Therefore remove the tape immediately when there is a possibility of moisture condensation and no picture (or a mono-colored picture) is obtained. To evaporate the moisture rapidly, leave the player turned on without a tape loaded.
• **Cassette**
  When a cassette tape is carried from a cold place to a warm place, the cassette tape may become wet. When there is any possibility of moisture condensation, eject the cassette tape and leave it outside of the compartment for about one hour.

Specifications

System

Video recording system
Rotary two-head helical scanning FM system
Audio recording
Rotary head, monaural system
Video signal   NTSC color, EIA standards
Usable cassette   8mm video format cassettes
Tape speed SP: approx. 1.43cm/sec.
LP: approx. 0.72cm/sec.
Maximum recording time
SP: 2 hours 30 minutes
LP: 5 hours
(with Sony P6-150)
Fast-forward and rewind time
Approx. 4 minutes (with Sony P6-120 cassette)
Tuner section
Channel coverage
VHF channels 2 to 13
UHF channels 14 to 69
Cable TV channels 1 to 125
VHF/UHF output signal
Channel 3 or 4 (selectable)
75 ohms, unbalanced
VHF/UHF input signal
75 ohms, F-type connector for VHF/UHF IN and
VHF/UHF OUT

Inputs and outputs

Video input   LINE IN VIDEO (phono jack) (1)
Input signal: 1 Vp-p, 75 ohms, unbalanced,
sync negative
Video output LINE OUT VIDEO (phono jack) (1)
Output signal: 1 Vp-p, 75 ohms, unbalanced,
sync negative
Audio input LINE AUDIO (phono jack) (1)
Input level: −7.5 dBs
Input impedance: more than 47 kilohms
Audio output LINE OUT AUDIO (phono jack) (1)
Standard impedance: −7.5 dBs at load impedance
47 kilohms
Output impedance: less than 10 kilohms
CONTROL S IN Minijack
CONTROL L 3-pin mini-mini jack

Timer

Clock Quartz lock
Timer indication   12-hour digital indication
Timer setting   Only for recording
6 events/1 month max.

General

Power requirements   120 V AC, 60 Hz
Power consumption   14W(max.)
Operating temperature 5°C to 40°C (41°F to 104°F)
Storage temperature   −20°C to 60°C (−4°F to +140°F)
Dimensions   Approx. 225 × 75 × 252 mm (w/h/d)
Approx. 8 7/8 × 3 × 10 inch
Weight   Approx. 2.25Kg (lb oz)

Remote Commander RMT-V119

Remote control system   Infrared control
Command mode   Selectable VTR 1, 2 or 3
Power requirements   3V DC
2 size AA batteries
(IEC designation R6)

Supplied accessories, see page 5.

Design and specifications subject to change witl
notice.

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If you have any question about this product, call:
Sony Customer Information Center
East Coast : 201-930-7669 (Sony) NJ
Central   : 708-250-7669 (Sony) IL
West Coast : 714-821-7669 (Sony) CA

or write to :
Sony Customer Information Center
Sony Drive, Mail Drop # T1-11,
Park Ridge, NJ 07656